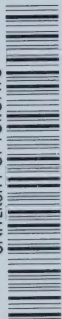


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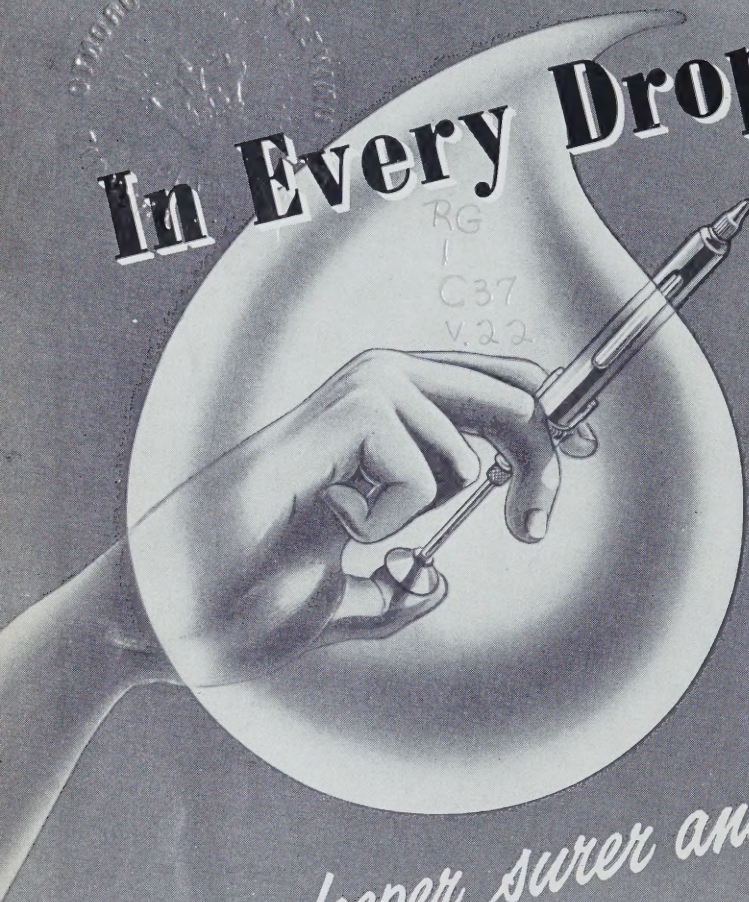
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Journal

OF THE CANADIAN DENTAL ASSOCIATION

The histamine factor as related to minor surgical manifestations*

by SYDNEY HORNSTEIN, D.D.S., Montreal

(1) INTRODUCTION

The clinician associated with the field of oral surgery is often faced with the very difficult problem of pain and swelling that is the ultimate result following the extraction of impacted teeth.

These post-operative reactions will often differ to a great degree with reference to the traumatic resistance of the adjacent teeth, the bone, and the periodontal structure; and this problem is relatively obscure particularly when the extirpation is performed by the same operator using similar techniques.

This difference in post-operative reaction is undoubtedly a by-product of the various types of inflammation.

(1) (a) THEORY OF INFLAMMATORY PROCEDURES.

Inflammation is a reaction or response of the live tissues to irritation. The irri-

tation may be infection, mechanical, thermal, or chemical. The symptoms of inflammation are heat, pain or redness, swelling, and disturbance of function. The inflammation may be either acute or chronic, terms which, however, may refer either to the duration of the process or to the strength of the irritation. Usually, in acute inflammations the course is rapid and short. In chronic inflammation there is usually a slowly progressive process with slight reaction on the part of the tissues, but the process may be entirely destructive or it may be both progressive and destructive, as in chronic osteomyelitis. Inflammation may result in recovery or in pathologic production of tissue, as in hypertrophy; or it may produce granulomatous tissue, cysts, tumors, etc. It may result in suppuration or abscesses, ulcers, gangrene, and other destructive processes.

Inflammation, hence, is a local reaction of the body to an irritant. The nature of

*A thesis presented for the diploma of Oral Surgery at the Faculty of Dentistry, University of Montreal.

the irritant is immaterial. The pattern of inflammation is stereotyped, i.e. the nature and sequence of events concerned in inflammation is practically always the same. The object of inflammation is to remove or destroy the irritant and repair the damage to the tissues. The types of inflammation may be sero-fibrinous, hemorrhagic, purulent, catarrhal, allergic, etc. The symptoms of inflammation are pain, swelling, redness, heat and disturbance of function.

Irritation, ^(*) and ^(*) regardless of the cause, will bring forth a reaction in tissue characterized by a sequence of vascular phenomena, as follows: (1) initial constriction followed by dilatation of the blood vessels, mostly in the arteries and least of all in the capillaries. This reaction is probably caused by histamine, although certain authors attributed it to leukotaxine. (2) Initial acceleration followed by slowing of the blood stream. This slowing may become more and more marked so that circulation in the part may stop with consequent clotting of the blood resulting in thrombosis. Necrosis or gangrene then occurs. Slowing of the blood stream is due to swelling of the endothelial cells lining the walls of the blood-vessels, to greater viscosity of the blood from loss of plasma to the tissues, and to margination of the leukocytes. (3) Ordinarily the red and white blood cells flow in the centre of the blood vessel (axial stream) while the plasma circulates near the periphery (plasmatic zone). In inflammation, the white blood cells move toward the periphery and adhere to the vessel wall. This is called pavementing or margination of leukocytes, and is probably a chemotactic phenomenon. (4) Lastly, migration of white blood cells through the vessel wall, diapedesis, by ameboid movement occurs. Red blood cells may also pass through the vessel wall giving rise to hemorrhagic inflammation. Leukotaxine plays an important role in this process by increasing capillary permeability.

The defenses concerned in inflamma-

tion are (a) cellular and (b) humoral. (a) Cellular—The principal cells are the polymorphonuclear leukocytes, mononuclear cells (macrophages and giant cells), and small lymphocytes.

The polymorphonuclear cells are phagocytic for bacteria, alive or dead, but are inactive against dead tissue cells or foreign matter. They not only ingest but digest bacteria by means of ferments. They liberate thrombokinase which helps to form fibrin and on dying they liberate a proteolytic ferment which digest fibrin and dead cells. They are present only during the acute or early stages of inflammation, especially during infection with pyogenic bacteria, and are the principal constituents of pus.

The large mononuclear cells are phagocytic for bacteria, dead cells, blood pigment, etc.; digesting cellular debris and particulate matter. They are scavenger cells and appear later in the inflammatory reaction for "mopping-up operations". If the job of removing debris is too much for one cell, a number will band together to form a "foreign body giant cell". The mononuclears are the wandering cells of the tissues (histiocytes) or may be derived from the monocytes of the blood.

The small lymphocytes appear later in the reaction and, in large numbers, are indicative of the presence of a chronic reaction. The exact function of the lymphocytes is unknown but they are thought to have an antitoxic effect.

In special forms of inflammation, e.g. allergy or parasitic infestation, eosinophiles may be present.

(b) Humoral.—The blood plasma normally escaping from the vessel wall is less viscous and contains less protein than the blood plasma remaining in the blood-vessel. In inflammation, the blood plasma leaking out into the tissue spaces contains much protein and is known as serum or as intercellular fluid. The amount of lymph is greatly increased during inflammation so that it may accumulate in the tissue spaces and cause

edema. The lymph has a threefold function: (1) It contains certain antibacterial substances of the blood plasma, chiefly opsonins which prepare the bacteria for phagocytosis (no opsonins,—no phagocytosis), agglutinins which clump or agglutinate the bacteria paralyzing their activity, antitoxins which neutralize toxic products and bacteriolysins which dissolve bacteria. (2) It dilutes bacterial toxins thereby reducing the potentiality for tissue damage. (3) It also helps to form fibrin. The fibrinogen of the blood plasma which leaks out of the vessel in inflammation, is acted upon by the thrombin liberated by the disintegrated polymorphonuclears to form fibrin. The fibrin forms an interlacing network, like a barbed wire entanglement, trapping and confining the bacteria to the inflamed area. In addition, plugs of fibrin are formed, like barricades, which stop up the lymphatic channels. In this manner, bacteria are fixed or immobilized to a small area, instead of spreading and causing general body damage. This is known as "lymphatic blockage". Formation of fibrin may be prevented by proteolytic ferments released by polymorphonuclear leucocytes.

(1) (b) HISTAMINE THEORIES

Some authors more notably, men like Dr. Roland E. Silverman ^(*) have advanced the idea that Histamines play a predominant role in these different types of inflammation.

Histamine is derived from Histidine which is one of the eleven Amino Acids essential to growth. The loss of the carbon dioxide radical from Histidine results in the formation of Histamine. This is known as decarboxylatin. It was identified by Best 1927 as being present in normal tissue ^(*). It is present in all tissues, although its method of formation has not been established. Evidence is now available that suggests that Histamine plays an important physiological role. It is abundantly present in the lungs and is also probably contained in the white

blood corpuscles and most probably in the Eosinophiles. Blood platelets are very high and rich in Histamine content. In blood vessels, Histamine causes a Vaso-Dilation of Arterioles and Capillaries. This effect is independent of innervation and is not blocked by Atropine. With sufficient Histamine release, the permeability of the vessels is altered, resulting in a transudation of plasma protein and fluid into the extracellular space, when it gains access to the circulation of the capillaries of the body participating in the reaction. Histamine release may be precipitated by the injection of any foreign substance, on the endothelial cells lining the vessels.

The histamine theory is yet somewhat obscure but it may have an influence on the production of inflammation. It may explain, for instance, why two patients, with the same appearance of physical resistance, of about the same age, may considerably differ as to their respective reactions to the removal of impacted teeth in the same location and of a somewhat similar relation to adjacent structures.

(1) (c) METHOD OF APPROACH.

As the literature dealing with the relationship of Histamine swelling is far from abundant, we have intended to contribute by means of a series of tests, a partial solution to this problem. The initial chapter of this study dealt with the administration of a Histamine test proper performed on a select group of patients presenting the same class of Mandibular impacted third molars and in one case an upper palatine impacted cuspid; in order to obtain the maximum results wherein their full cooperation was obligatory so as to obtain specific data. This in its essence presented a precarious problem in the role that the Histamine might play in the field of surgical trauma, and the prognosis proved rather informative.

Observations were made on successive days following the operation in order to note the affirmative of the Histamine

test resulting in greater pain and swelling when those cases were positive as compared to those that were negative. This we may add was a series of experiments relevant to the role of Histamines during the course of surgical intervention, conducted during a two year post-graduate internship in the field of Oral Surgery at the University of Montreal.

(2) METHOD OF PROCEDURE.

In order to further implement the ideology behind this form of experimentation, we shall further elaborate on the methods used, instrumentation, age, health, precipitating factors, etc., etc.

The particular Histamine of choice was the injection of 0.2 cc of Histamine Acid Phosphate, furnished by the Eli Lilly Drug Company, sub-cutaneously at a medial site of the patient's forearm. This test was performed as previously mentioned, in order to obtain the particular prognosis as to whether or not, and if so, to what degree of post-operative Edema, Ecchymosis, and resultant Traumatic swelling might occur. The region was observed for approximately ten minutes after injection and the wheal and possible pseudopods were noted and the degree to which that occurred was indicative as to the results we had assumed would occur, as above. In certain cases, the patient developed a slight increase in temperature, redness in the face with increased circulation, but with all these factors, the patient was none the worse. A positive reaction with a slight, medium, severe or more so was noted as well as a lack of reaction and the entire episode subsided for fifteen minutes. Certain cases were accompanied by chills and it is not known whether this was an apprehensive reaction or not. The date and time of day was recorded as well as the general health of the patient. The entire group was performed using local anesthetic (Xylocaine, 1:100,000 epinephrine). Once again, in all cases a block injection to the foramen of Spix, anaesthetizing the inferior dental nerve, accompanied

by a long-buccal or buccinator injection. The extirpation of the said tooth was indicated because of the possibility of pericoronal infection, true impaction, or pain, as a result of impingement onto the neighboring tissue or teeth, or because of the patient's education as to the possibility of any one of these factors.

Irrespective of the prognosis assumed, all patients were instructed to place applications of ice bags on the affected exterior region for a period of half an hour, every hour the first day and half the second day in order to reduce swelling, to be followed by hot applications, similarly administered. The alleviation of pain was indicated by the oral administration of tablets containing $\frac{1}{4}$ to $\frac{1}{2}$ grs. of codeine, and $2\frac{1}{2}$ to $3\frac{1}{2}$ grs. of Acetylsalicylic Acid to be taken every four hours during the day and one before retiring and not to exceed four or five per day. The patients were examined on the first day, second, third, fifth and seventh in order to record the reaction where, slight, medium, severe to swelling, pain and temperature. The complexity of the operation performed as such was recorded as to grade, namely—simple, complex or severe.

(3) DISCUSSION OF DATA

Approximately 20 patients were performed upon, varying from 20 to 40 years of age and all in good physical condition. It was noted in 75% of the patients that the Histamine test proved very positive in relationship between the severity of the operation proper to the reaction which ensued, was consistent. 35% of the cases proved the veracity of this, such that in 75% of the cases, when the operation was severe with much needed surgical trauma, the post-operative reaction was complicated as well. The relationship between the Histamine test proper and the resultant reactions proved consistent, such that approximately 80% of all cases that had very positive Histamine reactions resulted in greater post-operative complications such as Malaise, swelling,

HISTAMINE AND ANTIHISTAMINE TEST CASE

Case No. _____

Record No. _____

(1) Name _____ Age _____

(2) Address _____ Tel No. _____

(3) Nature of case _____

(4) Operation

- a) Date
b) Anaesthesia
c) Degree

<u>Simple</u>	<u>Complex</u>	<u>Severe</u>
---------------	----------------	---------------

(5) Histamine test

(6) Antihistamine test

(7) Histamine reaction

(8) Antihistamine reaction

(9) Reaction to operation

- a) Swelling slight
 medium
 severe
- b) Pain slight
 medium
 severe
- c) Temperature

<u>Drug</u>	<u>Quantity</u>	<u>Site injected</u>	<u>Date</u>	<u>Hour</u>
<u>None</u>	<u>Slight</u>	<u>Medium</u>	<u>Severe</u>	<u>Very severe</u>
<u>1st day</u>	<u>2nd day</u>	<u>3rd day</u>	<u>5th day</u>	<u>7th day</u>

TABLE I
Histamine Reactions as Compared to Age and Sex*

AGE:—	13-20 Years	20-30 Years	30-40 Years
Very Positive or severe reactions:—			
(Male.....)	1	2	1
(Female.....)	1	1	0
Slightly or Mildly Positive reaction:—			
(Male.....)	0	1	0
(Female.....)	1	2	0
True negative reaction:—			
(Male.....)	0	0	0
(Female.....)	0	0	0

*All patients were positive (whether slight or severe) to Histamine test reactions and there were no true negative cases—all receiving 0.2 cc. of Histamine acid Phosphate.

TABLE 2
Comparison of Post-Operative Reactions to Positive
Histamine Reactions

AGE:—	13-20 Years	20-30 Years	30-40 Years
Post-operative reaction:—			
Swelling:—			
Slight.....	2	1	
Medium.....		3	
Severe.....	1	2	1
Pain:—			
Slight.....	2	2	
Medium.....		2	
Severe.....	1	2	1
Temperature:—			
	0	0	0

pain, difficulty in swallowing and in opening and closure of the Mandible because of the tension brought to bear on the Pterygoid & Masseter muscles. (Partial Trismus).

In the experiments carried on by Dr. Roland E. Silverman ^(*) & ^(*) during a seven month investigation as to the effects of the Anti-Histamines in the field of Oral Surgery, he noticed a tremendous reduction in the incidence and intensity of pain, a shortening of the healing time and considerable reduction in tissue slough. Swelling, bleeding, and Trismus appeared substantially diminished and healing occurred more frequently by first or primary intention; in those few cases that healed by second intention, pain was rarely present.

In the work performed by Commander W. Basil Johnson ^(*) U.S. Navy, wherein he concludes from the literature and experiments obtained, that Histamine creates an expansion of the Capillaries, a lowering of the blood pressure, and damage of the Capillary Endothelium, there is a consequential flow of Plasmas into the surrounding tissues, and an increase of the red blood Corpuscles. These factors signify an intense disturbance of the circulation.

Feinberg ^(*) states that the Histamines cause Capillary dilatation followed by localized Edema due to the passage of Plasma proteins into the extracellular spaces surrounding tissue by virtue of changes in the permeability of the vessel walls.

(4) CONCLUSIONS.

This being one of the primary experiments, in order to be fully appreciated should be followed up with the Anti-Histamines, and this is only a premise to further experimentation.

Several questions post themselves for consideration. For how long a period of time does Histamine release continue? Does it continue until a natural barrier is established between hosts at the site of trauma? Is it possible that alternations of cell physiology by Histamine release

is the cause of pain? Would a decrease in the bleeding and swelling occur due to the increased capillary tone if Anti-Histamines were administered, and also would these antagonistic products restrict pain because of their local anesthetic properties? Would the Edema, Ecchymosis and Hematoma be reduced as a result of Anti-Histamine therapy or would it still exist because of the Hyaluronidase?

These ambiguous causes may certainly become more legible or intelligible with the use of Anti-Histamines because of the mere fact observed when a Histamine test is administered. This statement appears hypothetical, but in reality it is not, because of extensive research done with the Anti-Histamines by men such as Dr. Roland E. Silverman, Commander W. Basil Johnson, Morris M. Wolfred and Samuel M. Feinberg.

It appears from the literature that more direct work has been done of the relationship of the Anti-Histamine proper on surgical and accidental trauma than the true relationship of the liberation of the Histamine factor in the blood at the site of the intervention with all due respect and purely by accident. Dr. Roland E. Silverman, at a Hospital in the United States, wherein a group of patients were undergoing Anti-Histamine Therapy for allergies, and had been performed upon surgically, that the administration of Anti-Histamine prior to general anesthetic, improved the Post-Operative course and appeared to add to the safety of the anesthetic; with continued Anti-Histamine administered post-operatively there was a reduction in the intensity.

This piece of research work is inevitably minute in its content, but it nevertheless serves to act as another cog in the developmental research carried on, and will serve, we trust, in elaboration of one of the manifold complexities that we must overcome in order to render our inevitable conquest of the natural opposing tendencies constantly in our midst.

We should also like to thank the members of the staff of the Oral Surgery

Clinic at the University of Montreal for their kind cooperation in assisting us with this ever present problem;—with

special mention to Dr. Gerard de Montigny for his conscientiousness, good will, and advice at all times.

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NATIONAL HEALTH WEEK, 1956

This year, Canada's 12th National Health Week, sponsored by the Health League of Canada in cooperation with Departments of Health and Education from coast to coast, will take place from January 29th to February 4th, 1956.

Health Week, has been held for the past 12 years, and with the unfailing help and cooperation of men and women in service clubs, home and school groups, schools, churches, advertising, newspapers, radio and television stations, industrial companies, retail stores, the restaurant industry, motion picture exhibitors, and public health workers, the message that health is the greatest asset that any country can have, was brought to the eyes, ears, and minds of all Canadians.

How many of us realize the millions of dollars that are poured out on medical care—medical care for diseases that could be prevented each year in Canada?

A regular paved two-lane highway, complete with underpasses and sidewalks, could be built from Halifax to Vancouver and back for what Canadians pay out in medical and dental bills in one year. The yearly bill for dental care alone runs over the seventy-million dollar mark.

Time lost at work through illness mounts to a staggering figure—143,150 years of working hours—or a period many times longer than all recorded time is lost in one year by Canadian workers.

Eight thousand Canadians lose their lives through accidents. Of this figure, 1,500 are children, under the age of 15. Death comes from traffic accidents, drowning, fires, suffocation by ingested objects, accidental poisoning, falls and crushings, firearms, and accidental electrocution.

Much illness and disease can be prevented. The fluoridation of communal water supplies, has already reduced the incidence of tooth decay by as much as 69 per cent in some areas.

The grisly yearly toll of human lives lost, and the greater number of crippings resulting from accidents, can also be lowered. Health is everybody's business—and everybody can help.

Health Week will focus the public eye upon two particular phases of health this year—that of accidents, which could be prevented, and of fluoridation of communal water supplies, which has been called one of the greatest discoveries in the field of public health in the past century.

Health Week brings to the attention of every Canadian the fact that health is of great national importance to everyone in the country — the message that prevention is better than cure, and pointing out once again, that the Greatest Wealth is Health.

Multiple apicoectomy

by NORMAN BUTTERMAN, B.Sc., D.D.S., Montreal.

Indications for multiple resections on anterior teeth and upper posterior teeth are not frequently found, but where multiple areas of infection are present, the dentist can do an immeasurably valuable service if he performs immediate sterilization and resection rather than multiple extraction. (It is taken for granted that the patient is of average health and that radiographic examination of the teeth shows adequate periodontal support.)

The procedure outlined in this paper is one which will enable the dentist who is practising general dentistry to perform root resections without the use of elaborate equipment and without the need for an assistant to apply a spray and use the surgical aspirator.

In perfecting the procedure, I have borrowed from the methods used by Dr. Wilfred J. Johnston, chairman and professor of the department of Endodontics at McGill University; Dr. Harry M. Seldon, former chief of the Oral Surgery Department of New York University.

To these I have adapted the "water-air-spray technique", used in cavity preparation with diamond instruments, to the surgical bur (see photograph). This eliminates the need for an assistant with spray and aspirator. The solution in the

spray bottle can be sterile saline but I prefer the use of a normal saline solution of Zephiran Chloride 1:2000.

The advantages of the "water-air-spray technique" over the nozzle and surgical aspirator tip are as follows:—

1. Eliminates the need for an assistant to operate spray and suction.

2. Only a very small volume of liquid is sprayed on the field, thus the liquid is easily picked up by a ball of sterile cotton placed in the patient's mouth, which the patient closes on.

3. The air in this spray blows away the liquid and blood which gives you a clearly visible field. The field is cooled by the liquid-cool-air mixture of the spray.

4. The field is sterile because Zephiran Chloride is used.

5. The surgical bur does not clog because it is continually washed by the spray.

6. The spray always follows the bur and is not left up to the assistant's ability at target shooting.

7. There are no aspirator tips and spray tips for the surgical bur to bump up against and to interfere with the surgeon's view.

8. When resecting molar and bicuspid apices in the region of the maxillary sinus, even if the sinus is accidentally punctured, there is still no debris pushed into the sinus because the field is always debris-free due to the constant Zephiran-air spray at the centre of the target. Thus the resection of the bicusps and molars with apices close to the maxillary sinus can be done successfully.

The following is an outline of the entire management of the apicoectomy either multiple or single.

PREMEDICATION

A.) *Ascorbic Acid, Calcium and Phosphorous.*

Two to three days preoperatively the patient is administered a daily dose of 500 Mg. Ascorbic Acid and 30 grains of

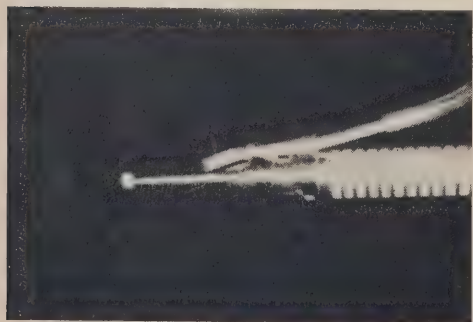


FIGURE 1

Zephiran-Air-Spray Technique with Surgical Bur.

calcium and phosphorous as edible bone flour which also contains other trace elements. This should be routine procedure before performing surgery on any part of the body.

B.) Antihistamine.

A half hour before operating, an antihistamine (25-50 Mg. of Oramamine; Thephorin; etc., depending on age of patient) is administered to reduce post-operative traumatic oedema and its associated pain.

C.) Nembutal.

Two to four grains of Nembutal, via the oral route, is given about fifteen minutes before surgery. This reduces anxiety and fear which results in a very co-operative patient, thus eliminating the need for general anaesthesia.

D.) Parenteral Antibiotics.

A good pre-surgical prophylactic antibiotic is a combination of Penicillin and Streptomycin. The amount and frequency of antibiotic varies with the doctor's evaluation of the health and case history of the patient. The Schick skin test before injection is advisable as a test for sensitivity to the antibiotics.

E.) Antiseptic Mouth-wash.

An antiseptic mouth-wash such as Detol just pre-operative will greatly reduce the bacterial count and thus come closer to approaching a sterile field.

F.) Local Anaesthesia.

Local anaesthesia for apicoectomy should be the same as that for extractions. That is, both a lingual and labial or buccal injection is necessary. A long-lasting anaesthetic such as Xylocaine or Ravocaine is preferable. The lingual injection must be more profound than for an extraction. That is, slowly inject about one half a cubic centimeter of anaesthetic rather than a few drops.

Thus the doctor is now ready to perform surgery, completely painlessly and without anxiety on the part of the patient "or the doctor". It is assumed that the sterile endodontic procedures have been

completed before premedication and surgery is begun.

OUTLINE OF SURGICAL PROCEDURE

1. Absorbent cotton, incision, elevation of flap, exodontic sponges.

Place a ball of sterile absorbent cotton in the patient's mouth and instruct the patient to close the mouth comfortably. The incision is now made with a No. 15 Bard Parker scalpel. There are two methods of choice.

A. Moon-shaped incision high in the mucco-buccal fold which extends a distance of approximately one and one half to two root apices on either side of the root apices for resection.

B. Cervical-line incision with a disto-apical and mesio-apical extension.

I prefer the moon-shaped incision for single root resections where there is a high mucco-buccal fold (or a high Fornix). The resulting scar will show in the patient with the short lip, thus in this case the cervical-line incision is preferable because it eliminates the long labial or buccal scar, leaving only a scar at the distro-apical extensions of the incision. In the case illustrations you will note that I have used the mucco-buccal fold incisions. There is a further advantage in the cervical-line incision. That is, if the incision opens soon after surgery (which frequently occurs), there is less chance for fistula formations if the incision is a greater distance from the area of bone removal than if the incision is close by, as in a moon-shaped incision. This point, I am sure, can be argued either pro or con.

After the incision is made, the flap is raised with the periodontal elevator. The edge of a sterile endontic sponge is tucked under the flap and the flap and sponge held in a raised position with periodontal elevator in the left hand. The sterile sponge changed periodically will take care of all the bleeding, thus eliminating the assistant and surgical aspirator.

2. Surgical Bur, Air Zephiran Spray and Curettage.

The spray bottle is filled with a solution

of Zephiran Chloride 1:2000 (diluted with normal saline). The ready mixed 1:1000 solution is not used because it usually contains anti-rust which is an irritant.

The surgical bur of choice is now placed in the handpiece using surgical-sterile precautions. The patient or doctor operated spray is now begun and the surgical removal of alveolar bone over the root apices is begun. There is no need to stop the rotating bur at intervals because the field is clear, cool, sterile, and easily visible and the bur does not clog. I resect the apex of the root in this one operation. Others may prefer to do a curettage and then resect the apex of the involved tooth or teeth. After resection of the apex is complete (constant reference to roentgenograms is made to determine extent of bone removal and amount of root resection), a thorough curettage is carried out to remove any remaining granuloma and necrotic tissue. The same spray is then used to wash the area of surgery thoroughly.

3. Pack, Sutures, and 2% Benzoic Acid temporary seal.

Gelfoam saturated in solution of penicillin and streptomycin is loosely placed in the field of bone removed. The antibiotic saturation of the Gelfoam has two advantages. (a) It provides a constant antibacterial action and (b) It eliminates the air bubbles of dry Gelfoam which tend to interfere with healing. Sutures of choice are then placed unsparingly about two or three millimeters apart; engaging large bites of tissue. The sutures are tightly tied. Due to the fact that there is very little post-operative pain, patients tend to eat normally and smile fully in the first 24 hours. This tends to tear the tissue in which the sutures are placed and reopening of the wound occurs frequently if the above precautions in suturing are not followed. The area is then painted with a 2% solution of Benzoic Acid (Friars Balsam) to form a temporary coating over the area of incision and to provide a temporary anti-fungal action.

POST MEDICATION

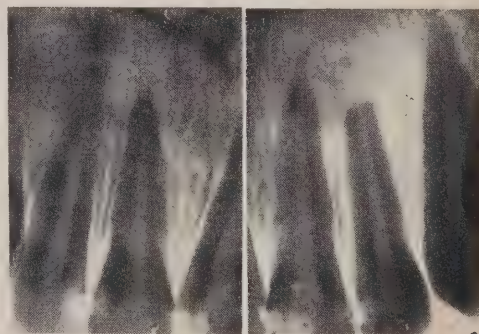
In the first 24 hours post-surgically, antibiotics may be administered if the doctor deems it necessary for the patient. The use of 25 milligrams of antihistamine every four to five hours during the first 48 hours post-surgically greatly reduces the extent and duration of oedema and swelling. One-eighth to one-quarter grain Codeine is usually prescribed with instructions to take the pills only if necessary. Most patients find it unnecessary to take Codeine. A purgative is prescribed within the first 48 hours. Ascorbic Acid, Calcium and Phosphorous is prescribed in decreasing amounts from 4-6 weeks post-surgically.

The patient should be observed daily for the first three or four days post-operatively to observe the closure of the flaps. If one or two sutures have loosened, then replace the sutures or place one-eighth inch gauze saturated with Zinc-oxide Eugenol into the opening and change the dressing daily until the opening has closed over. The sutures can usually be removed eight to ten days post-surgically.

CASE ILLUSTRATIONS

CASE A.

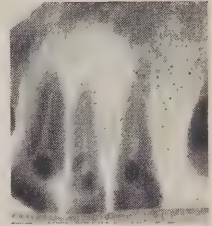
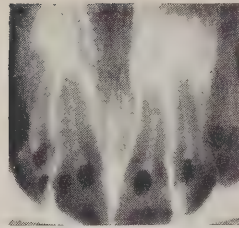
HISTORY:—Accidental fracture of upper right central incisor due to a fall on ice in February 1953. No treatment instituted until May 2, 1953 when patient appeared with cellulitis and pain in upper right central incisor area.



Apex of 1.

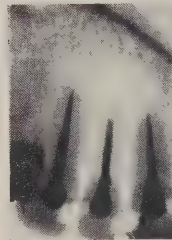
Apices of 3, 2, 1

May 5, 1953. Rarefaction at apices of upper left central incisor and upper right and lateral incisors and cuspid. The lateral also showed resorption of the apex. Patient suffered rampant caries.



May 28, 1953. Radiograph immediately after resection of apices of 3 2 1 | 1. An area of two cubic centimeters of bone was removed which extended to the soft tissue of the palate in the area of the lateral.

Dec. 2, 1954. Radiographs just before immediate sterilization, packing and resection.



Sept. 19, 1955. Radiographs 9 months after surgery.

Sept. 8, 1954. Sixteen months after surgery shows that the Lamina dura has completely regenerated surrounding the apices of 3 2 1 | 1. The lateral naturally still shows a radiolucent area adjacent to its apex.

Lamina Dura Completely Surrounds Apices of 3, 1. | 1, 2, 3.

Apex of 2 has not filled in yet due to tremendous bone removal all the way from labial to Palate.

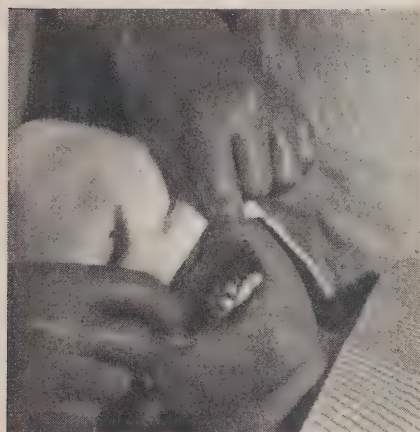
CASE B.

HISTORY: — Patient had large silicates placed in anteriors by a dentist in another country six weeks previously. On Nov. 10, 1954, the patient appeared with acute pain

in the region of the upper left central and lateral incisors and cuspid. Drainage was established and the pain was relieved. All six anterior teeth were sensitive to percussion and did not respond to thermal or electrical stimuli.



Bone removal, root resections and curettage complete on both left and right sides. Note, surgical aspirator being used, this is before the idea of an Air-Zephiran spray was conceived of. Dec. 2, 1954.



Ten sutures placed. Dec. 2, 1954.

CASE C.

HISTORY: — Rampant Caries, frequent tooth-ache.

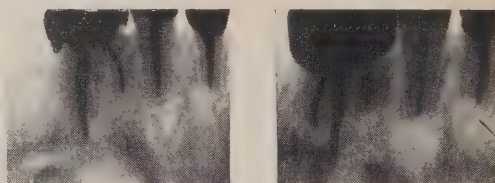
Prognosis:—multiple extractions.

Area in discussion is right maxillary quadrant. Patient referred with large areas at the apices of the upper right first and second bicuspid and lingual root of the first molar. The second molar had been extracted. The cuspid and lateral required mesial and distal fillings

and the lateral had apical involvement requiring endodontic treatment. The central required a mesial filling.

TREATMENT:—

1. Edodontia of lateral incisor.
2. Apicoectomies of the buccal and lingual roots of the first bicuspid, the buccal root of the second bicuspid and the two buccal roots of the first molar from the buccal aspect of the maxilla and apicoectomy of the lingual root of the first molar from the palatal aspect of the maxilla.



Resection of Bu. and Li. roots of 1st Bic., root of 2nd bic., and Bu. and Li. roots of 1st molar.

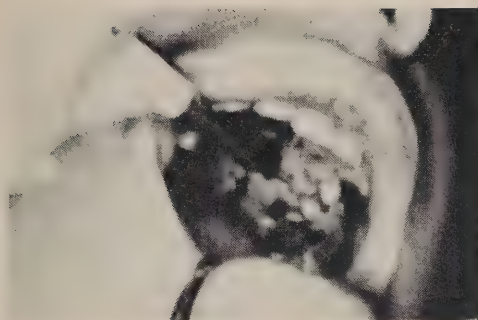
6 mos. after surgery lamina dura completely surrounds all apices.



Buccal openings in alveolus after resection of roots on Bu. and Li. of 1st Bic., Bu. of 2nd Bic. and Bu. roots of 1st molar.

SUMMARY

A technique has been outlined which employs the simple Air-Zephiran-Spray to eliminate the usual saline spray and surgical aspirator. The field of operation is clean, easily visible, free from excess instruments and sterile. Posterior roots can



Lingual opening in palate after resection of Li. of 1st molar.

be resected almost as easily as anteriors.

A complete procedure is described covering premedication (in which antihistamines are employed), surgical procedure (in which two methods of incision are discussed), and post medication. Three case histories of multiple apicoectomies are illustrated.

Thus Multiple Apicoectomy is a successful, valuable and satisfying service. It can be carried out with a minimum of armamentaria and assistance.

4744 Cote des Neiges Rd.,
Montreal, Quebec.

The Burlington orthodontic research centre

by FRANK POPOVICH, D.D.S., M.S., Burlington, Ontario

Although it is true that preventive measures are the most important factors in safeguarding the health of an individual, nevertheless, in the practice of orthodontics, the amount of valid information available on preventive methods is extremely small. The lack of this knowledge and the importance of its effects have been appreciated by various members of the staff of the Faculty of Dentistry at the University of Toronto, and owing to their determined efforts, an orthodontic research centre, the first of its kind on this continent, was established three years ago in Burlington, Ontario. Burlington was chosen for this study because it is principally a stable residential town with a present population of 8500.

The Burlington Lions Club supplied the initial office space, while the project is

financed by a grant in aid through the Federal Department of Health & Welfare and a portion through the Division of Dental Research, University of Toronto. The Centre has for its staff, a geneticist, three orthodontists, two paedodontists, and a secretary, on a part time basis, and a full time orthodontist and technician.

The specific objectives of the project are—

1. To evaluate the application of interceptive orthodontic procedures on a serial basis beginning at three years of age. The actual treatment of dental caries is carried out by the local dentists while the research centre treatment involves the use of space maintainers, space regainers, acrylic bite planes, cribs, lingual and labial arch wires and monoblock type of appliance therapy.

2. To analyze and define the characteristics of normal and abnormal occlusion.

3. To assess the role of inheritance in determining a number of clinically significant characteristics of cranial and facial growth.

4. To build up a library of data for future studies.

The 1200 children whose parents consented to their participation in the study are aged 3, 6, 8, 10, 12 years and represent 85 to 90% of all Burlington children of these ages. The serial study is to be carried out on the three year age group now consisting of 320 children. 900 children of the ages 6, 8, 10, 12 years are used as a cross-section control sample. The children of the control group are seen only once, at which time a complete set of records is taken, and the parents are advised concerning the child's need for operative or orthodontic treatment. Meanwhile, the 320 children of the three year age group (serial) have a complete set of records taken annually and any child found with an indication of an irregularity in oral development is recalled at a suitable time for treatment.

The records are taken as close as possible to the month of the child's birthday and consist of the following:

1. Case history — which is a three page medical and dental history. This information is collected by asking the same questions of each mother.

2. A clinical examination to assess growth and occlusion.

3. Six cephalometric radiograms employing the high K.V. technique of Harvold and Cartwright.¹ These include,—
Three laterals—rest position, occlusal contact position and open position.
Two obliques—left and right side.
One anterior-posterior position.

4. One wrist radiogram—for determining the carpal index.

5. Impressions and wax bite for dental casts.

6. Where necessary periapical films are taken.

7. Height and weight records.

8. Electromyographic records have been initiated in Nov., 1955.

Although the evaluation of interceptive orthodontic treatment between three and twelve years is the initial aim of the study, the opportunities for other types of research provided by this project are considerable. The study offers, moreover, unique opportunities for the investigations of the role of inheritance in growth and development of the face. Since the sample includes several related individuals and since similar records have been taken for each child, when the three year old children reach six years of age it will be possible to establish heritability and probability values for certain characteristics. (Both of these factors are of considerable importance to the clinician).

Today, three years following the initiation of the project, 1700 complete sets of records have been taken and 75 children are undergoing treatment. Precise notes are recorded as to method of treatment used and the exact time spent on each case. In addition, a number of research papers have been completed from the data so far accumulated, while a number of other problems are in the process of being investigated.

Now that the data is being analyzed it is anticipated that the results obtained will in some measure serve to clarify some of the complexities and inconsistencies which now confuse our knowledge of facial growth and development. Moreover, in a few years' time this research centre should have a contribution to make, not only regarding the role of heredity in problems of facial growth at various ages, but also it should serve to indicate just how early preventive and interceptive treatment should be administered to be most effective.

REFERENCE

¹Cartwright, L. J. and Harvold E. Improved radiographic Results in Cephalometry through the use of high Kilovoltage. J.C.D.A. 261-263. May, 1954.

Alberta's second annual dental health week

by W. A. NIXON, D.D.S., Calgary, Alberta

The Alberta Dental Association sponsored its 2nd Annual Dental Health Week in April, 1955. The members felt that it was successful, and in an endeavour to make Dental Health Week more widespread throughout Canada, this paper is submitted.

The aim in presenting such a program, is to further Dental education amongst the laity, emphasizing for the main part, Preventive Dentistry. To this aim, the committee is faced with two problems: firstly assembling suitable information, and secondly presenting this material to as many people as possible.

Some time, effort, and money is needed to do this successfully. A provincial Dental Health Week Chairman was chosen, Dr. K. A. Burnham of Edmonton, and as such he directed the efforts of his committee in the various Dental Societies throughout the province.

Before going into the detail of the plan, perhaps a few generalities will serve a useful purpose. In any program such as this, several precautions must be taken. It is part of our professional constitution that we refrain from advertising, so in preparation, all material had to be self-edited to this end. No attempt was made to induce people to attend the Dentist, rather the opposite was stressed in teaching preventive measures. Essentially, Dental Health Week is a program closely united with Public Relations and realizing the value of approval by our citizens is an inducement to work on such an effort. The public is not aware of the Dental problem and the far reaching effects of caries, so there is no difficulty in assembling information. Earlier, advertising was mentioned. It is the potent force of our commercial life today. Realizing this, the Dental Health Week committee is essentially one with advertising the main object. It is the only way one

can get it across to the public. At the risk of repetition then, it is again emphasized that although "Dentistry" was not advertised, prevention was.

ORGANIZATION

The avenues of outlet of information were considered and various committees set up in all Dental Societies:

1. Newspaper Committee

The duties of this committee were to see that as much material as possible was published as news items in daily and weekly newspapers. When necessary, they inserted paid advertising announcing radio panels and other items of interest. They interviewed editors or sub-editors and arranged for coverage of as many meetings as possible where dentists were speaking.

2. Radio and television committee

These committee members arranged radio talks, panels and where possible, Television programs.

3. School Committee

Arranged for dentists to visit the schools and talk to the children either in classrooms or in assembly. They interviewed school principals and heads of local school departments, and helped with the distribution of posters and pamphlets to the school children.

4. Adult Education Committee

This committee arranged for talks at Service Clubs, Home and School Associations, and wherever they felt were good listening audiences.

5. Commercial Committee

The job here was to secure the interest and help of commercial firms. Some, such as Drug Stores, Dental Supply houses, etc. are more or less directly in-

terested. There are many others, such as Department Stores, Druggists' Associations, Dairies, the Canadian Milk Foundation, Laundries and Chain Stores.

The plan followed closely that of the American Dental Association in presenting their Dental Health Week in February, 1955. The Central Committee received some excellent material from the American Dental Association and this included several items worthy of note.

1. A folder outlining suggestions for promoting Dental Health Week.

2. Copies of speeches, press and radio releases, suitable for presentation to various groups deemed by the committee as good listening or reading audiences.

3. Lists of firms on preventive dentistry and Dentistry as a Career.

3. *Folders on Fluoridation*

The central committee received a quantity of Posters and Pamphlets from the Department of National Health and Welfare, in Ottawa. An advertising firm was engaged to carry out the work entailed in presenting the press and radio releases to the organization concerned.

To cover the inevitable expenses brought about by this and other aspects of the program, the Alberta Dental Association budgeted \$3,000.00 to the promotion of Dental Health Week. The ultimate cost to the Association approximated \$4,000.00.

With the general object of "greatest coverage to the greatest number" in mind, the committee chairman did considerable preliminary work, keeping in touch with the central committee.

In January, a meeting was called in Edmonton, attended by the committee chairmen, a representative from the advertising agency, Department of Public Health officials, and several Executive members of the Alberta Dental Association, including the President and Secretary. The general plan was presented by the Central Committee and each Chair-

man presented his report of work done to date, and his prospective plans. Films were shown and the meeting was deemed successful and valuable to the promotion of Dental Health Week.

Generally speaking, the following is an outline of what was done. It must be understood, that a great deal of flexibility is necessary in such a scheme, in that conditions in the outlying districts are different to those in the cities.

Press Release and Newspapers Generally

The advertising agency handled the official releases and the coverage was generally good. In the city daily newspapers, one item appeared daily for the duration of the week. This dealt with dental health education, preventive measures, some information on fluoridation, and stressed the widespread incidence of caries.

The weekly papers were circularized and several reported Dental Health Week quite well. It is difficult to obtain good coverage in this respect, and in 27 weeklies, advertising was purchased for the campaign. Some papers published good editorials, and to a greater or lesser degree, meetings at which dentists spoke were reported. It is interesting to note that several daily papers took a favorable stand towards fluoridation, which may have been due in part to Dental Health Week. It helped considerably if a dentist were able to meet the editor personally, rather than rely on letters. It must not be forgotten, however, that in all this work, there is some controversy and the papers are prone to publish the letters of those who believe we have only detrimental interests at heart. One paper published a fine article concerning the life and work of a highly esteemed Dentist with many years of useful practice to his credit.

Radio and T.V.

Where possible, since these media are expensive, advantage was taken of public service broadcasts, such as panel discus-

sions and the various programs where an authority on a subject is interviewed.

Several excellent panels were presented and well received as far as we know. In Edmonton, on CFRN-TV a one-half hour live viewing program was presented by a group from the University, including Dean Hamilton, Dr. McLean and Dr. Samuels. Part of the film "Gateway to Health" was shown and it was felt that the time and effort used here was well worth while.

The advertising agency arranged for "spot" broadcasts on most of the stations presented at various times throughout the day. These were prepared by the central committee and paid for from the funds allotted to Dental Health Week.

The Milk Foundation and Commercial Drug Companies included us in their advertising on local net works and Betty Tomlinson of the C.B.C. spoke twice on Fluoridation and Dental Health.

In Calgary, a half hour panel discussion on several aspects of dentistry was presented. This panel included a moderator from the Radio Station, a public health nurse, two dentists and an orthodontist. All societies felt that the radio was an excellent outlet of material and we are looking forward to the very favorable situation that will be presented by television in the future.

Schools

The Department of National Health and Welfare pamphlets and posters were mentioned earlier. They are of excellent quality and in attractive designs and color. The difficulties encountered were in receiving sufficient numbers, and in their distribution. It was intended that every school room receive a poster and every child a pamphlet. This did not occur. It would appear that careful and detailed preparation must be carried out both with the Department of Health and the Department of Education for such favorable distribution to come about. It is a mammoth task for the Dental Associations to at-

tempt this either from the point of view of mailing or individual distribution.

The Department of Education agreed to do this for us, with the distribution being carried out by the Health units of the schools, but due to unforeseeable circumstances it was unable to help us out in this regard. This made our coverage in the schools inadequate, and likely was a definite weakness in our campaign.

When arranging to have speakers in the schools, care had to be taken to consult the principals first. In Calgary, the supervisors of the Public, Junior High, and High Schools were consulted and good co-operation was received. Where possible, upon the advice of the supervisor, speakers were sent to schools and talked to the students. Several copies of the film "Gateway to Health"* were available and well received by the children. Question periods were interesting to say the least.

In the High Schools, several dentists continued the plea for more dental students, together with talks on "Dental Health."

Adult Education

In this respect, great value was received from the Home and School Association talks. The Home and School is a very interested body, and whatever is said at one of their meetings is carefully digested. It was found that short speeches here, led to long and interesting question periods. Again the film "Gateway to Health" was enthusiastically received. Fluoridation was a good topic for these meetings, and in Calgary, the Central Council of the Home and School presented a resolution to its parent body in favour of fluoridation of communal water supplies. Most of their associations have a press committee and thusly our work here was also reported in the papers.

Service clubs are another ideal outlet for information and any topic of current interest, even though controversial, is a

* The Alberta Dental Association and The Calgary and District Dental Society each purchased a copy of this film.

Alberta Dental Association

OFFICE OF THE PRESIDENT
410 GERRARD STREET EAST, TORONTO

You Can Use ... DENNIS THE MENACE

IN PRODUCT PROMOTION FROM NOW UNTIL APRIL 30th



- ★ Your Newspaper Advertising
 - ★ Flyers
 - ★ Window Displays
 - ★ Envelope Stuffers
 - ★ Bus Cards
 - ★ Special "Kiddie" Mailings
 - ★ Cards on Your Delivery Vehicles
- He's At Your Paper Now!

HANK KETCHAM, creator of that famous comic character, Dennis the Menace, has given us a copyright release to use Dennis to help promote Dental Health Week in Alberta, April 28th to 30th this year.

The kinds of products you sell lend themselves so well to the Dental Health theme we know you'd be interested in this news.

The mat shown has been sent to most weekly newspapers in Alberta in both 1 Col. and 2 Col. sizes. Additional mats on request. Write Dr. K. A. Burnham, 9110 - 88 Avenue, Edmonton.

PLEASE -- this "Dennis the Menace" drawing must be used in its entirety. Please don't change it ... use it in its present form to --

BOOST SALES OF YOUR PRODUCT

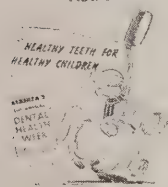


FIGURE 1

welcome item. Dentists are fairly well represented in these organizations and it was not too difficult to place speakers. It was found, however, that in order to arrange the talks to be given in Dental Health Week early notification had to be given their program committees. This was also quite notable with respect to Home and School Associations.

Commercial Committee

None of the committees are successful in their efforts to promote Dental Health Week without expending a good deal of time and energy, but the Commercial Committee can possibly do more to bring the campaign before the public eye, than some of the others. Theirs is a job entailing salesmanship and much attention to detail.

The American Dental Association was fortunate to be given a cartoon of "Dennis the Menace" by his creator, Hank Ketchum, and in its folder, mentioned earlier, the little fellow graces the front cover. The Alberta Dental Association immediately went to work and was also

granted the privilege of using the same desirable cartoon. The American Dental Association, of course, had its appropriate lettering and slogan included in the drawing. The Central Committee in Alberta, after some deliberation had already selected a slogan, and if the cartoon was to be used some changes had to be made. These were drawn up and forwarded to the American Dental Association and those concerned with the copyright matters regarding the use of the drawing. The revised copy was approved and its use granted according to the terms and conditions as illustrated in Fig. 1.

The various commercial committees then had the job of literally selling the idea of using Dennis the Menace in advertising. Many firms were approached, including department stores, dairies, chain stores, laundries and any others considered as likely prospects, who routinely used newspaper advertising. The laundries were amongst those who co-operated quite well, possibly as a good public relations gesture. The material supplied to all daily papers and several weeklies was used quite often, and as a result, Dental Health Week became a reality with the children. Regarding "Dennis the Menace", perhaps the most striking example of his use was in Calgary, where the Milk Foundation sponsored and paid for a very attractive display card. The Dental Health Week Committee drew a rough sketch of this and turned it over to the Milk Foundation, who had it drawn by commercial artists and printed in three colors. Fig. II.

This card was displayed in the Calgary Transit System buses for quite some time and received much favorable comment. The Milk Foundation was most co-operative in that they also placed a copy of the

book, "Your Child and Mine"* in all Calgary and District Dental Offices. They mentioned Dental Health Week on their radio program and in Edmonton inserted a fine display in the newspaper.

The drug stores were willing to cooperate and several of those large enough to advertise, inserted "Dennis the Menace" in their ads. Many arranged fine window displays and druggists helped considerably in distributing Department of National Health and Welfare posters for this purpose.

It is evident, then, that the Commercial Committee can be very instrumental in promoting Dental Health Week. It was found here that personal interviews were necessary, but once contacted, the managers or proprietors concerned were ready and willing to use our advertising. They stand to gain by selling products beneficial to dental health.

The committee learned from this experience, that there is a great potential in commercial organizations, interested in Health that would likely be tremendously helpful if approached in the proper manner.

A few comments remain on some generalities of Dental Health Week. In a program such as this, Dental Hygienists can work very well, especially with the school children. Only one was available in Alberta and she did a fine job in Calgary and Lethbridge schools.

The local societies, in order to get the week off to a good start, timed their monthly meetings to fall on the Monday of Dental Health Week. In Calgary a very successful meeting was held and attended by several principals of the schools in the city. Several films were shown, and Dental Health Week was outlined for the

* An excellent book about the story of Dental Health, prepared by Dental Public Health Committee of the Ontario Dental Association.

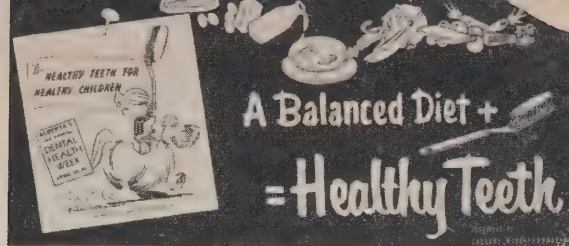


FIGURE 2

benefit of the guests and dentists alike. One of the difficulties that arose, was the observance of Dental Health Week in country points where the dentist does not have the benefit of a large dental society to help him organize. He is pretty much alone and must act in the capacity of all committees. In many towns, this was well done, and with the help of the Central Committee who contacted most weekly newspapers, and the Department of Education, who wrote to all school principals; his role there was at least introduced. The need for education in rural areas is most acute, and sadly enough most difficult to carry out. So with a greater and wider application of Dental Health Week much can be accomplished.

In the interests of good public relations, no particular field of the refined carbohydrate industry was attacked. It was felt that question periods would take care of doubts arising out of the consumption of the various sugar products. Such was the case, and these questions were easy to answer. The difficult questions come from the school children, who, after hearing a short talk and seeing the film, invariably asked, "Are there going to be any more movies?"

Dental Health Week was only made possible by the combined efforts of many people. The first task was to get the dentists interested. There is a crying need for Dental Public Health Education, and it would appear that Dental Health Week is a good method of stirring up interest. It has been said that such a campaign, concentrated into one week of the year is not going to help matters much for the remaining time. As things stand now, our people don't have the advantage of even

that short course to health. Dental Health Week is a good beginning, and can, with some expended effort, become a fine instrument for health education. Out of this and further work will come weekly and daily articles in our papers on dental health. Education is the answer to a large portion of the caries problem, and we dentists are the potential educators. There is a reticence to speak in public that must be overcome, and since dentists are the only ones competent to speak on matters dental, they must lay aside their fears or inhibitions and do their part.

There is an amount of detail to cover

in preparing speeches, radio panels and formulating T.V. shows. It was found in Alberta that there are many willing hands both in and out of the profession—and if nothing more is accomplished in early trials than to convince the public that we have its interests at heart, at least that is something. It is well to note again that care must be taken not to give anyone the opportunity to point to us as advertisers or as a high pressure group of salesmen. If anything was sold, it was the good old slogan—"An ounce of prevention is worth a pound of cure".

*200 Grain Exchange Building,
Calgary, Alberta.*

FLUORIDATION PAMPHLETS AVAILABLE NOW

For those who would like to know more about fluoridation, the Health League of Canada has prepared two pamphlets on this nationally-important subject. One, *The FLUORIDATION PICTURE*, gives information about many aspects of fluoridation which may puzzle the layman. The second, *FLUORINE FACTS AND FANCIES*, answers specific charges which have been made against fluoridation by ill-formed groups.

Fluoridation of municipal water supplies is a matter of utmost concern to all thinking people who have the welfare of their children at heart. For solid information, write to the Health League of Canada for these informative booklets.

The two pamphlets are available now, at five cents each.

For groups who may be interested in bulk orders, the following prices are included:

FLUORINE FACTS AND FANCIES			
1,000—	\$20.00	2,500—	\$50.00
5,000—			\$90.00
THE FLUORIDATION PICTURE			
1,000—	\$17.75	2,500—	\$40.00
5,000—			\$70.00

With larger orders, the prices of these pamphlets will decrease accordingly.

ABSTRACTS

Tissue Response to Endodontic Treatment.

by R. F. SOMMER, D.D.S., M.S.

International Dental Journal, June, 1955.

Because of the remarkable defensive and reparative functions of pulp tissue, greater efforts should be made to maintain the integrity of vital pulps.

Pulp capping in young healthy teeth not associated with a carious exposure may be successful if properly carried out.

Success in vital pulp amputation should not be determined by a dentine bridge over the pulp stump, but rather on the

health of the pulp tissue remaining in the canal.

If the root canals of teeth with granulomas are rendered nontoxic and sterile and hermetically sealed to the dento-cemental junction, reversion of the granuloma to normal bone will follow without surgical intervention or the stimulation of foreign medicaments.

Bacteriological controls are essential in determining the sterility of canals before hermetical sealing is justified.

Use of Roentgen Rays in the Dental Office.

by RUSSELL I. TODD, D.D.S., Richmond, Ky., and DONALD C. WORTH, Ph.D., Tokyo Japan.

The Journal of the American Dental Association, December, 1955.

In view of the increasing information and concern about the damaging effects of roentgen ray radiation on various parts of the body, a survey was undertaken to measure the roentgen ray dose received in dental offices by the patient, dentist and assistant. A secondary objective was to study the inherent dose rates of various dental x-ray machines in order to determine means of reducing said dose rates.

Data was obtained in 23 dental offices

in Kentucky through use of ionization chambers and personnel monitoring film badges. Measurement of radiation dose at various positions in the head of a patient undergoing dental roentgenographic examination was accomplished by means of a phantom head suitably modified to accommodate the measuring devices. Roentgenograms of the phantom's teeth were taken to demonstrate the slight effect on picture quality of adding sheet aluminum filters in the x-ray

tube head, while at the same time measurement showed the reduction in skin dose rate made possible by use of these filters to range from 50 to 70 per cent of the original skin dose rate.

One of the x-ray machines commonly employed in dental offices was found to deliver a dose at rates ranging up to 235 r per minute for short cone use, and up to 79 r per minute for long cone use at 16 inches. Mechanical defects and some necessary electrical improvements were noted in several machines.

Typical values of the dose to the skin, eye, internal mouth area, pituitary and lymph glands of the patient were determined. Skin dose may be as great as 184 r for full mouth examination. The typical eye dose rate for a lower central incisor picture, with short cone, is 12 r per min-

ute. The typical cervical lymph gland dose rate for a lower molar picture made with the short cone is 1.1 r per minute.

Office survey measurements indicated several serious situations involving, for the most part, defective equipment or the use of a careless technic. The great majority of offices, however, were found to have relatively safe radiation levels as regards the permissible weekly dose. The relative infrequency of roentgenographic examinations in most of the offices during the time of the survey undoubtedly accounts for the fact that, with the exception of a few irregular instances, the weekly dose did not exceed 69 mr.

The importance of caution in the irradiation of the patient is stressed particularly in view of the present ignorance of the long-range effect in human beings.

A Study of the Use of a Topically Applied Stannous Fluoride Solution in the Prevention of Dental Caries.

by HUGH R. McLAREN D.D.S., D.D.P.H. and H. K. BROWN, D.D.S., D.D.P.H.

Canadian Journal of Public Health, October, 1955.

Topical applications of unbuffered aqueous 2% solutions of stannous fluoride and of sodium fluoride, and of a placebo solution (sterile distilled water) were administered to the teeth of three groups of approximately 200 children each, aged 6-11 years. Treatments of the two agents under study, and of the placebo solution, were allocated randomly within blocks of three children, matched for age, sex and race. The Knutson method of topical application was employed; the treatments were preceded by dental examination and prophylaxis.

The dental caries experience of the three groups of children (permanent teeth only) was observed and recorded

at intervals of one year and two years after treatment. Only the findings on children available for re-examination in complete blocks of three were included in the analysis of the study data. Analysis included adjustment of the post-treatment findings for variation in initial caries level, by covariance.

At the end of one year after treatment it was found that both stannous and sodium fluorides effectively reduced dental caries incidence. The evidence suggested that stannous fluoride was significantly superior to sodium fluoride in this respect. Fewer statistically significant differences between post-treatment mean increments of caries were found at the end

of two years after treatment. In general, however, the two-year findings were not inconsistent with those obtained at the end of the first study-year. Despite the loss of precision suffered through the loss of subjects, the two-year data provided some supporting evidence of the greater effectiveness of stannous fluoride than that of sodium fluoride as a topical agent for the partial prevention of dental caries. The apparent superiority of stannous fluoride, despite the fact that, at equivalent concentrations, solutions of this agent contain half as much combined fluoride as sodium fluoride solutions, is of particular interest.

The findings also indicated that topical fluoride therapy is of greater relative efficacy when administered to younger, rather than to older children. There was some evidence of sex differences in re-

sponse to topical applications of the fluoride solutions under study, but the data here were inconclusive. It is considered that such apparent differences may be related to the loss of balance between numbers of males and females in the final study population. Analysis of the two-year data indicated that topical fluoride applications have diminishing effectiveness inhibiting dental caries after a lapse of more than one year following initial treatment.

Because of the high loss of subjects during the second study year, the findings must be considered inconclusive. However, the results of the study tend to confirm the superiority of stannous fluoride over sodium fluoride as a topical caries-reducing agent. Further clinical investigation is needed in order to obtain more conclusive evidence of the magnitude of its effect.

Dental Caries of the First Molars and the Age of Children when First Consuming Naturally Fluoridated Water.

by R. M. GRAINGER, D.D.S., M.S.D., D.D.P.H. and C. I. COBURN, D.D.S., D.D.P.H.

Canadian Journal of Public Health, September, 1955.

The average accumulated caries scores on surfaces of the deciduous and permanent first molars were related to the age of 700 children upon moving into the fluoride endemic regions of Aylmer and South Dorchester, Ontario. There was significantly less decay on the permanent first molars of children who were born in the region or arrived after their sixth birthday. Although the graphic array of means for deciduous teeth suggested that there was a similar protection to the teeth of children born in the region, or who arrived before their second birthday, the difference was not significant. This indicates that the protection to deciduous

teeth may be less than to permanent teeth.

It is inferred that if to give protection to a tooth it must be introduced before the final maturation of the enamel begins, or about one year before tooth eruption. There is little or no indication that the earlier introduction of fluoride during amelogenesis is of added benefit. Individuals migrating into a fluoride endemic region or beginning to ingest fluoridated water may expect reduced caries susceptibility for those teeth which erupt after a few months' consumption of fluoridated water.

Signs of Periodontal Breakdown on Patients With Malocclusion—age 10-20.

by TIMOTHY J. O'LEARY, D.M.D. and CARLOS E. SOSA, D.D.S.

Journal of Dental Medicine, October, 1955.

Ninety-four cases of malocclusion were studied by means of pre-treatment casts and roentgenograms. The amount of periodontal disturbance seen may possibly indicate a predisposition to alveolar resorption in cases of malocclusion with its concomitant occlusal derangements.

It is not expected that these findings will be accepted widely because of the great divergence of opinion on what is normal and abnormal in the periodontium. However, it is hoped that this paper will stimulate further work on this problem with its many ramifications. Several lines of investigation would prove of value; one would be to determine the sites of alveolar bone loss, lamina dura absence and widening of the periodontal membrane on the root surfaces in relation to each type of clinical malocclusion.

Another project would entail following a series of these cases in patients (10-20 year old group) over a period of years with clinical and roentgenographic examinations at stated intervals to determine whether repair or further disintegration would occur. A third worthwhile investigation would be to record the pre-treatment findings on a series of youthful patients (age 10-20 years) and then, after appropriate orthodontic treatment, re-examine the patients at suitable intervals to see if the periodontal breakdown had been repaired.

This investigation has served to re-emphasize the close inter-relationship between the fields of Periodontics and Orthodontics. Only through close co-operation and concerted effort between these two specialties will the initiation and progression of many cases of masticatory breakdown in later life be prevented.

Nutrition and Dental Caries.

by CECILE HOOVER EDWARDS, B.S., M.S., Ph.D., Tuskegee Institute, Alabama

The Bulletin of the National Dental Association, October, 1954.

Studies from a wide selection of population groups indicate that there is a strong association between diet and susceptibility to dental caries. When the nutritional adequacy of the diet is insured, arrest of dental caries activity and reduction in the initiation of new lesions can be accomplished.

If dental caries is to be prevented instead of repaired mechanically, the challenge to the dentist is clear. He has the

opportunity of contributing to the well being of his patient by aiding him to maintain better oral environment and oral structures through improved nutrition. The nutritionist must not only continue her efforts to educate the public concerning the importance of good nutrition, but also to extend her efforts to include the unborn through contacts with expectant mothers. The effective early control of dental caries is, indeed, a challenge worthy of consideration.

Clinical Evaluation of a Penicillin Dentifrice.

by MARTIN LUNIN, D.D.S., M.P.H. and IRWIN D. MANDEL, D.D.S., New York

The Journal of the American Dental Association, December, 1955.

Prior studies on the efficacy of a penicillin dentifrice in caries reduction have produced conflicting results. To date, the only positive result has been the study by Zander, in which supervised brushing with a tooth powder containing 500 units of potassium penicillin per gram was reported to lower the incidence of caries 54 per cent. This present study differs essentially from Zander's in the lack of supervision of brushing, which may account for the difference in results. It would appear from our findings that with ordinary unsupervised toothbrushing, a penicillin dentifrice is ineffective in reducing the incidence of caries. An earlier study by Hill and Kniesner seems to support this observation.

It remains to be established whether even with supervised brushing, a penicillin dentifrice can significantly reduce decay. Walsh and Smart reported that supervised brushing with a dentifrice containing 100 units of potassium penicillin per gram had no effect on caries incidence. Hill, Sims and Newman, in an experiment patterned after the Zander study, reported no significant reduction in the incidence of decay with a tooth paste containing about 1,000 units of procaine penicillin per gram. The low concentration of penicillin in the Walsh and Smart study and the use of the procaine rather than the potassium salt in the Hill, Sims and Newman study might account for the differences in results.

The absence of a difference in acid production between control and experimental groups is consistent with our clinical findings. It is also in agreement with the lack of changes in lactobacilli counts re-

ported by previous investigators. The Snyder test rather than a lactobacillus count was chosen for this study because of the seeming inconsistency in the Zander report, in which the clinical reduction in the incidence of decay was not accompanied by a change in the lactobacillus count. It seemed possible that penicillin, in the concentration used in the dentifrice, might reduce or inhibit acid production without actually destroying the acidogenic organisms. The failure to observe a reduction in caries incidence in the present study precluded checking the possibility that this was the mechanism of the caries reduction reported by Zander.

Development of organisms resistant to penicillin is of concern when the continual use of a dentifrice containing this antibiotic is contemplated. Our results indicate that when acidogenic flora is considered in toto, there is no development of resistance at the one-unit level. No attempt was made to study individual strains of organisms. No development of resistances for lactobacilli was found by Fitzgerald, Zander and Jordan; no development of resistance for streptococci and staphylococci was found by Lind and Zander. Other investigators, however, have reported a higher incidence of resistant streptococci and other organisms in the mouths of users of penicillin dentifrices than in the control groups. Further study is necessary to clarify this situation.

The absence of manifestations of allergy or toxicity with daily use of a penicillin dentifrice is in agreement with all of the reported clinical studies to date.

Experimental Occlusal Trauma.

by S. N. BHASKAR, D.D.S., Ph.D., and BALINT ORBAN, M.D., D.D.S., Chicago, Illinois.

The Journal of Periodontology, October, 1955.

To study the relationship between occlusal trauma and periodontal disease, teeth in four monkeys were placed in trauma. To accomplish this, MOD inlays were cemented in the upper first premolars in such a manner that these teeth were subjected to excessive occlusal stresses in buccal direction. The monkeys were sacrificed and profused with 10% formalin at three days, three weeks, three months and six months postoperatively. The jaws were decalcified and embedded in celloidin. The upper premolar area was sectioned serially in a buccolingual direction and the corresponding region of the lower jaw was sectioned in a mesiolingual direction and stained mainly with hematoxylin and eosin. At the start of the experiment and at frequent intervals during its course, Kodachromes and roentgenograms of the experimental as well as the control sides were taken to determine objectively any changes in the position of the tooth or the color and texture of the gingival tissues.

THE FINDINGS

1. Three days after cementing the inlay, the tooth moved buccally so that the space between the opposing teeth in the rest of the arch was reduced. At three weeks, the movement of the tooth had progressed far enough that all the teeth were in occlusion.

2. Three days after the tooth was put under trauma, the pressure areas showed necrosis of periodontal fibres, thrombosis, and resorption of bone while the tension areas showed widening of the periodontal space and thrombosis.

3. At three weeks, the changes were similar, but far more pronounced than at three days. The alveolar wall in the tension areas showed beginning bone formation. The most striking change, however, was the presence of numerous areas of root resorption on both the tension and pressure sides.

4. Three and six months stages were characterized by repair. The periodontal membrane was of normal width, necrotic bone and connective tissue had been replaced by new bone and dense collagen bundles and the resorbed areas on the root had undergone repair. This repair was predominantly anatomic.

5. Clinically, the gingiva in none of the monkeys showed lesions comparable to gingivitis or periodontitis.

6. Pocket formation was not seen in any instance. Inflammatory cells were seen in the gingiva but these were not in excess of those seen on the control side.

From this experiment it was concluded that:

1. Occlusal trauma, contrary to various claims, does not produce gingivitis, periodontitis, pockets, pulp stones, recession, festoons, clefts, erosion or caries.

2. Changes seen in occlusal trauma are specific and in their extreme consist of necrosis of periodontal tissue, resorption of bone, thrombosis and root resorption on the sides of pressure and widening of the periodontal membrane, thrombosis and bone formation on the sides of tension. In some tension areas, root resorption also occurred.

3. The changes seen in occlusal trauma are reversible.

Comparative Clinical Evaluation of Radiographs Exposed with Films of Different Emulsion Speed.

by JACK BUDOWSKY, D.D.S., JOHN D. PIRO, D.D.S., EVALD LINDER, EDWARD V. ZEGARELLI, D.D.S., M.S., and AUSTIN H. KUTSCHER, D.D.S., New York, N.Y.

Oral Surgery, Oral Medicine, and Oral Pathology, October, 1955.

In order to investigate the effect of the use of faster emulsion speed x-ray film on radiograph quality (a study directed ultimately at decreasing the exposure of the patient and/or operator to x-radiation), individual and comparative evaluations of the quality of x-ray images resulting from the exposure of the same areas of the mouth using x-ray film of three different emulsion speeds were made. One film of each of four different areas in the mouth was exposed with each of the three x-ray films (standard slow, moderately fast, and very fast) in each of thirty-five patients. All films were processed under conditions standard for all three films. Blind study and evaluation of the resulting roentgenograms revealed that, in terms of both individual excellence and comparative performance, use of both the moderately fast and slow standard speed films was found to result in roentgenograms superior to the very fast films in a greater percentage of instances. There was relatively little to choose in terms of over-all clarity, variations in density, and visibility of detail between the moderately fast and slow speed standard films. However, many films exposed with the very fast x-ray film were judged excellent and

many were judged to be best in performance when compared with the two slower films. This suggests that it is possible to obtain radiographs of the highest quality using the very fast speed film and indicates that further study of some of the critical factors in exposure time, target-film distance, and processing may result in a technique productive of very fast films of uniformly high-grade excellence.

Although at present the routine use of very fast film with the short-cone technique is not indicated on the basis of this investigation, increased study of the use and performance of x-ray films with faster emulsion speeds seems highly desirable.

Since the exposure of the slow and the moderately fast speed films was found productive of relatively equally excellent films, in terms of both individual quality and comparative performance, increased use of the moderately fast speed film is definitely indicated, due to decreased radiation exposure of the patient and the operator. Where maximum excellence of films is essential, as in the study of difficult to diagnose lesions or when magnification of radiographs is anticipated, the use of the standard slow speed film is still indicated.

Investigations of the crazing of acrylic dentures and plastic teeth demonstrated that when linear methyl methacrylate polymer comes in contact with water during processing at elevated temperatures, the material is susceptible to crazing. Material protected from water during the processing does not craze.

Sorption of excess water at elevated temperature causes the surface of the material to be supersaturated with water when the specimen is cooled. Evaporation of excess water sets up strains which eventually are released by the formation of craze marks.

Journal of Dental Research, June 1955.

RESEARCH

FOREFRONT OF CANADIAN DENTISTRY

*Diet and Tooth Morphology**

by K. J. PAYNTER and R. M. GRAINGER

Experiments have been conducted to determine the effect of certain dietary factors on the morphology of the molar teeth of rats. The following conclusions have been drawn after analysis of results on approximately 300 animals.

1. The size of the fully formed rat molar is closely correlated ($r=0.7$) to the weight of the animal at five days of age.

2. Female rats on a diet containing a sub-optimal level of vitamin A during pregnancy and lactation bore litters whose teeth were smaller than those of controls. When tooth measurements were adjusted according to the weight of the animals, the tooth size in the vitamin-

deficient rats was smaller to the controls. This indicated that the smaller tooth size was not the result of a specific effect of a vitamin A deficiency, but rather was related to the general smaller size of the animals in the litters.

3. When measurements of teeth of animals raised on a diet containing 10-12 ppm. of fluoride were weight-adjusted, it was found that these teeth were smaller than those in control animals of their size.

It was observed that while the size of the rat molar was affected by a variety of factors acting during development, the depth and angle of the sides of fissures of the teeth were not changed by the same factors.

*Abstract of presentation to the Toronto Chapter, I.A.D.E., October 21, 1955.

It is the responsibility of our profession, working together to stimulate study, to avail ourselves of the best aid available so as to allow us to render more and better treatment to more patients. The best means of improving our status is by providing better educational facilities for hygienists, assistants, and close supervision and control of laboratory craftsmen. Their auxiliary services all fit into the picture of better dental care, but the service cannot be rendered without the organization and planning by the most important member of the team—you, the dentist.

Journal American College of Dentists, June 1955.

This new section is sponsored by the Hospital Dental Services Committee of the C.D.A. to promote interest in the establishment of dental services in hospitals. It is also the intent of the committee to present the activities in various hospitals and to encourage the discussion of problems encountered by staff dentists. Questions and discussions may be sent to the Chairman, 234 St. George St., Toronto, 5.

The committee is indebted to Dr. Keith Lindsay, Vancouver for the first series of two articles.

Hospital Dental Services

KEITH LINDSAY, D.D.S. Vancouver, B.C.

The Hospital Dental Services Committee is constantly striving to improve the standards of dentistry as practised in hospitals and to make these services available to all hospitals. To this end we must rely not only upon the dental profession but also upon the medical profession, hospital authorities and the general public. However, as our profession assumes a more prominent role in the health services and concentrates more and more on prevention and research, it is only too obvious that a closer liaison will exist between these groups.

The prevailing misconception of dentistry being limited to purely mechanical problems is ever present, and is shared by our medical colleagues and laymen alike. That sound oral health is a prime necessity to a healthy body only points more strongly to the fact that dentistry must be more closely associated with general medicine. It behooves our profession to realize this and to do everything in our power to bring about this closer liaison.

There is no over-all legislation which the committee can effect in order to overcome this discrepancy, as the whole problem must be solved on a local level. It is the responsibility of each of us to acquaint the medical profession in our community with this necessity, to make the hospital authorities and public cognizant of our willingness to participate in such an organized hospital program. It is our intention that every hospital shall have a recognized Department of Dentistry, staffed by a dentist or dentists who are capable of rendering a complete

dental service, and that this department shall have rights and privileges enjoyed by other departments.

As a general rule, hospitals are staffed by "Visiting and Active or Attending Staff". Visiting Staff are those who have the privilege of using hospital facilities for their private patients, while Active or Attending Staff, in addition to these facilities, supervise the internal workings of the hospital, care for the staff and indigent patients, organize out-patient departments, instruct nurses and other undergraduate students and are available for consultations involving in-patients.

The hospital acts of some provinces state that these positions must be occupied by qualified physicians, and as a result, dentists who now hold similar positions cannot legally utilize their appointment, for instance they cannot admit and discharge their own patients. Actually this is a minor problem and again on a local level can be overcome when we show that we are competent to perform such acts.

Visiting Staff privileges are all that are necessary for the treatment of private dental in-patients. For those dentists interested in the development of out-patient services, consultations in regard to medical and surgical problems related to dentistry and participating in other hospital activities, an Active or Attending Staff appointment is required. However, it is of prime importance that any dentist using hospital facilities, should conform to hospital rules and regulations and at all times to conduct himself in a manner befitting his professional status.



ANNUAL CONVENTION

THE CANADIAN DENTAL ASSOCIATION ALBERTA DENTAL ASSOCIATION

BANFF SPRINGS HOTEL, BANFF, ALBERTA

JUNE 3, 4, 5 & 6, 1956



ESSAYISTS

DR. ARNEF ROMNES:

Head of Department of Operative Dentistry, Northwestern University, Chicago.

DR. H. M. WORTH:

Noted Canadian authority on Radiology, Vancouver, B.C.

DR. SIDNEY T. WILLIAMS:

Prosthetic Dentistry, University of Washington, Seattle, Washington.

EDITORIAL

A political bogey—dispelled

"The decisive consideration is not whether the proposition is good, but whether it is popular—not whether it will work well and prove itself, but whether the active talking constituents like it immediately."

When Walter Lippmann wrote his book *The Public Philosophy*, it is reasonably certain that he did not have the subject of fluoridation in mind. This book deals, by and large, with the ills that plague democracies, and the effects of such conditions upon the international political scene. There is a striking similarity however between some of the statements of Lippmann and the demonstrated actions of a few politicians in dealing with the public health measure of fluoridation. From coast to coast in Canada there has been demonstrated evidence that certain elected officials, because of political trepidation, have been unwilling to institute a procedure which has been endorsed and supported by every mayor health organization on this continent. Elected officials who are called upon almost daily to make decisions which directly or indirectly affect the people whom they represent, are often loathe to bring to fruition a measure which by all common sense and normal reasoning has demonstrated proven efficiency and desirability. Instead many representatives wish to be relieved of the personal responsibility of making a decision and subsequently refer this complex scientific matter to the vagaries of a public referendum.

The Public Philosophy, again not considering fluoridation, has a few thoughts

which should be considered by all who are interested in the public weal: "The 'people' are not always right: Strategic and diplomatic decisions call for a knowledge—not to speak of an experience and a seasoned judgment—which cannot be had by glancing at newspapers, listening to snatches of radio comment, watching politicians perform on television, hearing occasional lectures, and reading a few books. It would not be enough to make a man competent to decide whether to amputate a leg, and it is not enough to qualify him to choose war or peace, to arm or not to arm . . . to fight on or to negotiate."

It is easily recognizable that many problems are extant when one proposes to make advances in the field of public health. Chlorination, vaccination and measures for venereal disease control all met with violent opposition when these procedures were promulgated. Even now in the year 1956, children in certain provinces are still being exposed to the ravages of bovine tuberculosis, because of the lack of a pasteurization law. It is perhaps not as dramatically distressing but nonetheless shameful that fewer than one-quarter million Canadians are at this moment being served by fluoridation programmes. Thousands upon thousands of our children, our country's greatest asset, are being denied the advantages of this proven public health procedure, and are being condemned to the continuing and growing ravages of dental disease.

Undoubtedly, the problem of instituting

this measure has not accrued from lack of interest or forthrightness on the part of local health authorities. With only two or three exceptions, various boards of health and medical health officers have been most positive in their endorsement and in the vast majority of instances have made strong recommendation to the body possessing the necessary legislative authority. At that point however, most fluoridation programmes have come to a grinding halt. Many elected councillors have, if not literally, at least figuratively stumbled over themselves in their haste to be relieved of the personal responsibilities involved.

The recent elections in the Toronto area have shed an interesting light upon this matter of political responsibility. The Municipality of Metropolitan Toronto has approved of the principle of fluoridation of the area's water supply. However, the municipality does not wish to proceed with the measure until all legal hurdles have been cleared. The Village of Forest Hill, one of the incorporated communities within Metropolitan Toronto, brought action in court, charging the procedure was "ultra vires" to the Metropolitan Council. The court, in its decision, ruled that Metropolitan Toronto did have the right to legislate in this regard. Forest Hill, after considering the decision, has decided to appeal to the Appeal Court of Ontario, and this hearing will probably take place some time in February. The foregoing can only indicate that fluoridation has been a most controversial contemporary *political* issue in the Toronto area.

The fluoridation matter was introduced into the recent Toronto election campaign as a political issue by one candidate for civic office and she was supported in her cause by at least one organization. A copious amount of literature was circulated in which the citizens of Toronto were admonished to remove from office all candidates who had supported the fluoridation procedure in council and to sup-

port those who had been in opposition. The names of the mayor, the chairman of the Board of Health, the chairman of the Works Committee of Metropolitan Council and three or four aldermen were given special denunciation for their support of fluoridation.

When the smoke of battle had cleared, the mayor was returned to office with the greatest majority of any mayor over a serious contender—the chairman of the Board of Health was returned as an alderman at the head of his poll—the chairman of the Works Committee, in an unprecedented victory was promoted from an aldermanic position to third place on the Board of Control in his first attempt for a controllership—and all the aldermen so named were returned to office.

The candidate who had been most vociferous in her opposition, ignominiously trailed all other candidates for aldermanic position in her ward, and placed eighth on the ballot.

Toronto Township, an area approximately fifteen miles from Toronto and having a population of almost 50,000 has been fluoridating for several months. The procedure was instituted by a courageous Public Utilities Commission which acted on the advice of the local Medical Officer of Health, and in opposition to the Reeve. The president of one of the local Ratepayers' Associations joined the reeve in this vocal opposition and managed to organize a great "citizens protest" by having twelve people from a population of 50,000 appear before the P.U.C. The chairman of the Commission told the group concerned that fluoridation equipment was going to be installed and that if they had further opposition, they themselves could run for office at the next election.

The president of this Ratepayers' Association did seek public office and although he was opposed by an individual who had never aspired to council previously, this president was defeated by an approximate 3 to 1 landslide. However

of greater significance was the fact the reeve herself was defeated by an individual on his first attempt at gaining the reeveship.

The evidence from the Toronto area appears to suggest that this public health procedure has not the political poten-

tialities that certain elected officials fear. Those in opposition, by nature, are always more vocal than those in support. Public officials should have no hesitation in instituting a measure which has been proven so conclusively to be in the interests of the public good.

Book Reviews

A Text-Book for Dental Assistants. By Irwin Robert Levy, D.D.S. Fourth Edition. Published by: The MacMillan Co. of Canada Ltd. Pages: 293. Price: \$4.50.

The fourth edition of Dr. Levy's "Text-Book for Dental Assistants" to be used by the girls taking the new certified course for dental assistants, covers most phases of dentistry in a very comprehensive manner.

The procedures are clearly explained and illustrated for those new to dentistry and serve as a refresher and stimulator to nurses who have been in the profession a few years. We all realize of course that this must be put to practical use before it has any value.

The doctors teaching the course might familiarize the students more fully with the ethics of dentistry in Canada and enlarge on the chapters covering chairside assisting and office records.

The chapter concerning the abrasive technique and ultrasonic unit are of interest.

Dr. Levy's dictionary of commonly used dental terms is a most useful appendage.

I would deem this book a must for every dental nurse's library. Ruth Mayhew

radiologist. The author makes it quite clear that both clinical and histological evidence must be taken into account before a diagnosis is attempted and that the radiograph has a definite contribution to make, especially in conditions which are not readily accessible to clinical examination. He deplores the tendency for dentists and students to make a diagnosis on the basis of radiographic examinations alone and emphasizes the necessity of correlating all the available evidence to determine the condition present.

The earlier chapters of this text are devoted to the development of the teeth and to a survey of the radiographic appearances of the normal anatomical structures and their variations. The author stresses the necessity for knowing the normal in order that the abnormal conditions may be recognized. Anomalies of the teeth then follow, and the later chapters are devoted to changes brought about by disease.

It is in the latter part of the book that the author's method of presenting the subject differs from many other publications dealing with dental radiology, as, apart from the results of radiographic examination, he has described in detail the etiology, pathology and clinical features of the conditions shown.

Printed on good paper, with illustrations which are numerous and of better quality than the usual, this text is by far the best of its kind ever written. The style is simple and the material well organized. It has a quiet dignity. The bibliography at the end of each chapter, the suggested reading matter and the constant reference to men who have done research work in the various categorical problems is most complete and is a tribute to a meticulous, exacting and sincere author.

Maxwell N. Rockman

Dental and Oral X-Ray Diagnosis. By A. C. W. Hutchinson, D.D.S., M.D.S., F.R.S., F.R.S.E. Published by The MacMillan Co. of Canada Ltd. Pages 524. Price: \$12.75.

The object in presenting this textbook is to provide, within reasonable limits, a survey of the present position of dental and oral x-ray diagnosis and, what is more important, to emphasize the need for a still closer co-operation between the pathologist, the clinician and the

The Association

THE FEDERAL PROVINCIAL CONFERENCE

The Proceedings of the 1955 Federal Provincial Conference have now been published. The Proceedings contain the complete formal statements made by the Prime Minister and the ten Provincial Premiers on the first day of the Conference, Monday October 3rd, 1955. Following the opening day the meetings were held in camera. These statements contain the expressed attitude of nearly all the speakers on the subject of health insurance and consequently represent the views of the respective governments.

In brief the following paragraphs attempt to set forth the expressed attitude toward the subject of health insurance.

Rt. Hon. L. S. St. Laurent

(Prime Minister of Canada)

He stated that health insurance was one of the important matters on the agenda.

"The federal government recognizes, however, that there may be circumstances in which it would be justified in offering to assist provincial governments in implementing health insurance plans designed and administered by the provinces. For a number of years, through the national health grants programme, we have provided assistance in the development of a full network of basic health facilities and services fitted to the needs of the Canadian people. We recognize that the building up of these facilities through the national health programme constitutes, in the words of my predecessor, Mr. King, 'a fundamental prerequisite of a nation-wide system of health insurance'".

It has been suggested, that following the build-up of provincial and local hospital and other facilities through the national health programme, the next step to be taken might well be the provision of universal radiological and laboratory services. This would assure the provision of expert diagnostic services in cases where the attending physician feels that it would be desirable to obtain the support of laboratory or radiological tests before arriving at conclusive findings and prescribing treatment."

* * *

"In the view of the federal government the condition prerequisite to federal support of a

provincial program in respect of health insurance is that it can reasonably be shown that the national rather than merely local sectional interest is thereby being served. I have already stated, on another occasion, that in my view, so long as only one, two or three provinces, representing a distinct minority of the Canadian population, indicate their intention to proceed with health insurance, there can be little if any justification for the national government imposing taxes on all the Canadian people to share the cost of health insurance in those provinces. But if there were a substantial majority of the Canadian people who were prepared to embark upon provincially administered health insurance schemes involving no constitutional change or interference in provincial affairs, but simply technical support and financial assistance from the federal authority, then the federal government would be justified in participating in an increase in the capital assets of the Canadian people."

Hon. Mr. Leslie W. Frost

(Premier of Ontario)

Mr. Frost reviewed the health insurance proposal at some length, stating that the federal government was committed to a policy of contributing health insurance; that the term was an all-embracing one and that Ontario proposed at the time the introduction of hospital and diagnostic services only. "We are anxious to evolve for Ontario a national plan that can be implemented in stages". He stated that in as far as possible the provincial cost share should be met by a premium system. The Ontario proposals were submitted in written copies and presumably considered in committee. In closing Mr. Frost suggested that a committee of the Conference be set up to proceed with intensive studies of the subject.

Hon. Maurice Duplessis

(Premier ministre de la province de Quebec)

Mr. Duplessis spoke in general terms respecting the relationship of the provinces to the federal government with many references to statements made in the past by Canadian statesmen. Although health insurance was a main item on the agenda he made no direct reference to the subject:

Hon. Henry D. Hicks
(Premier of Nova Scotia)

After speaking on the subject of fiscal relations at considerable length, Mr. Hicks said:—

"With respect to health and welfare services, I wish to say that Nova Scotia will give the most careful consideration to any plan which is proposed. The degree of participation by Nova Scotia however, in any such plan must depend, of necessity, on the financial ability of the government of Nova Scotia to finance any further services without imposing abnormal rates of taxation. This is a matter which cannot be disassociated from the general question of federal-provincial financial relations."

Hon. H. J. Flemming
(Premier of New Brunswick)

In respect of health insurance Mr. Flemming said:—

"The government of New Brunswick strongly endorses the principle of health insurance. However, provinces with a low per capita income will require commensurately greater assistance from the federal government than the provinces with a high per capita income. The government of New Brunswick is willing to carefully examine concrete proposals covering such a program as submitted to this conference."

Hon. Douglas Campbell
(Premier of Manitoba)

Like other speakers Mr. Campbell set forth the views of his province on fiscal matters and then turned to the subject of health.

"Federal Health Grants:

With respect specifically to the national health grant programme consideration should be given to the establishment of these grants on a more permanent basis than that presently existing. The limited annual forward commitment of this grant system results in serious difficulty for the provinces in the planning of provincial budgetary requirements.

Health Insurance:

The various reports regarding health insurance issuing from the national capital and from some provincial capitals have aroused much interest in Manitoba. We are most anxious to co-operate with Canada and our sister provinces in the fullest consideration and discussion of plans respecting national health insurance. In our view it is particularly fitting that the question of national health

insurance be discussed at the same time as the matter of general financial arrangements for the implementation of any such scheme having as it does such tremendous implications for the various provincial treasurers—would, of course, require recognition in any agreement which may be reached on fiscal arrangements."

Hon. W. C. Bennett
(Premier of British Columbia)

Mr. Bennett stated the views of his province as follows:

"Health Program

In 1945 the federal government proposed to the Conference on Reconstruction a national health program including medical, hospital, dental and pharmaceutical services. While no agreement was reached at that conference, such a program has become a matter of major concern to the people of Canada. While it is recognized that provision for the sick and the attitude and approach toward such a health program vary in different provinces, the province of British Columbia is of the opinion that the time is opportune to introduce a national health program.

British Columbia recommends that any province which is willing to participate in a health program should not be retarded by the refusal of others to participate. The federal government co-operated with the provinces on this basis when old age pensions were originally introduced; it shared in the costs with the agreeing provinces. It has followed the same principle in other matters, including the present health grants, and, since the first session of this Conference, in the matter of unemployment relief, on which agreement has now been reached in principle on the basis of a formula which further takes cognizance of the differentials in relief payments among the provinces.

Accordingly, British Columbia recommends that this Conference agree in principle upon the desirability of a health program adaptable to the requirements of the individual provinces; that such a plan make provision for medical, hospital, dental and pharmaceutical services, and that the federal government share equally in the costs of such health program to the extent that they have been or may be adopted by a province to meet its special requirements.

I can't help noting here, Mr. Prime Minister, that in the original submission by the national government, the federal offered to participate on a 60 per cent basis. Our province, being always fair, say we will now enter into a program on a 50 per cent basis with the national government."

Hon. A. W. Matheson

(Premier of Prince Edward Island)

Mr. Matheson frankly stated that in order to meet the costs of current proposals for the extension of health services and other matters some new fiscal policy would be necessary. He stated that for a province dependent upon agriculture the limit of taxation for public funds had been reached.

Hon. T. C. Douglas

(Premier of Saskatchewan)

After speaking on taxation Mr. Douglas said:—

"Now may I turn to the question of health insurance, and social welfare. The question of health insurance is the next major topic on our agenda. Saskatchewan's position in this regard is familiar to all. We welcomed with keen enthusiasm the federal proposal of 1945, which envisaged the ultimate establishment of a comprehensive scheme of health coverage for all Canadians. The plan was to be developed in successive stages, to be administered by the provinces with an eye to particular local conditions, and to be financed in part by a contribution of 60 per cent of cost from the federal government.

It was a bitter disappointment to us that the federal government of the day failed to implement its own proposal. They indicated their view that it would not be possible to proceed until 'a sufficient number of provinces' entered the fiscal agreements. In full expectation, however, that the proposal would be honoured in due course, we in Saskatchewan proceeded to develop our own province-wide hospital insurance plan, and to pioneer as well in tax-supported medical care programs.

At the 1950 Conference, I urged that 'each province be allowed to proceed stage by stage in establishing health insurance' along the lines most appropriate to its particular circumstances. Again at our April meeting, in arguing for inclusion of this topic on the agenda, I restated our view that a comprehensive plan of health insurance is a necessary and inevitable national objective. That is still our view today. I may add that we have been greatly heartened by the expressions of increasing interest in this subject on the part of several other provinces.

Today, I suggest once more that hospital insurance is a logical and proper first step in the development of a comprehensive plan. In the first place, I think we have proven in Saskatchewan that to assure adequate hospital care for all in need, and to banish the spectre of crippling hospital bills, is in itself a sound, social advance. Secondly, there is no doubt but

that hospitals across the nation would welcome a more adequate and secure basis of financial support. Furthermore, a framework of hospital insurance already exists in at least four provinces. Finally, it is noteworthy that of total payments now received by general hospitals, over 54 per cent is already paid in from various public funds, and a further 18 per cent comes from voluntary insurance schemes. As a consequence hospital insurance across the nation would mean that only the residual 28 per cent of cost now borne by individual private payments would have to be channelled through insurance funds.

In addition to joining with the provinces in establishing hospital insurance, in our view the federal government should be prepared to co-operate with any province desirous of setting up a medical care program, irrespective of whether or not it has proceeded with hospital coverage.

Such a program could be developed on a stage basis, for example diagnostic benefits, general practitioner services, or surgical care, depending upon the particular needs and plans of the province. In our view, too, care for the mentally ill and treatment of chronic disease must be recognized as integral phases of a comprehensive health plan."

He agreed with the suggestion of Mr. Frost that a committee of this conference be established on the subject of health insurance. Further he said that the programmes should be introduced when a majority of the provinces were in agreement.

Hon. E. C. Manning

(Premier of Alberta)

Mr. Manning confined his remarks to the subject of taxation arrangements. At the end of his address he stated, "We shall have some very definite opinions to express at the time the different subjects are discussed, and this would apply to the matter of health insurance". (It is presumed that the Alberta opinions were presented at the later meetings of the conference held in camera.)

Hon. Joseph R. Smallwood

(Premier of Newfoundland)

Mr. Smallwood confined his remarks to the need for development of national resources in Newfoundland and the financial position of his province. He did not mention the subject of health insurance.

The fact may be worthy of note that no government leader at this conference expressed an unfavorable attitude towards the principle of health insurance.

First Canadian Dentist to Senate

(See October Issue '55)

Dr. Paul E. Poitras makes correction of the statement that the Honorable Donald Smith, D.D.S. of Liverpool, N.S. is the first Canadian dentist to be appointed to the Senate at Ottawa. He submits the following information:—

"In my opinion Doctor Smith is the second. The first was the Honorable Pierre Baillargeon, practising for years in the City of Quebec as physician and dentist. Doctor Baillargeon was born at "Ile-aux-Grues" on November 8th, 1812, he received the degree of M.D. from Harvard University, in 1840, his L.D.S. in 1869, from 'L'Association des Chirugiens-Dentistes de la province de Quebec' and more, he was examiner into Dental pathology for students.

He represented the Stradacona district in the Canadian Senate from 1874 until his death, December 15th, 1891."

Acting Dean Appointed at McGill

Dr. James McCutcheon has been appointed Acting Dean of the Faculty of Dentistry, McGill University. Announcement was made by Principal F. Cyril James on October 14th last.

Dr. McCutcheon, a native of Elizabeth, N.J., graduated from McGill in 1945. He also obtained a B.A. degree at McGill and a M.Sc. degree at the University of Michigan. In 1948 he joined the staff of the McGill school as Associate Professor of Prosthetic Dentistry.

50th Anniversary at McGill

The 50th anniversary of the Faculty of Dentistry, McGill University was celebrated on October 18th last. A special convocation ceremony was held at which Sir William Kelsey Fry, C.B.E.; M.C., M.D.S.; F.D.R.C.S. (Eng.) received the degree of Doctor of Science. Arthur Lambert Walsh, D.D.S.; F.A.C.D.; F.I.C.D., a former professor, were awarded the title of Professor Emeritus.

Sir William Kelsey Fry was Dean of the Faculty of Dental Surgeons, Royal College of Surgeons of England, until recently. He is consulting dental surgeon emeritus to

Guy's Hospital and consultant to the Royal Air Force and University of Health.

Dr. Walsh was associated with the teaching of dentistry at McGill from the time of his graduation in 1920 until his retirement as Dean of the Faculty of Dentistry in 1948. He has been president of the American Association of Dental Schools, president of the Canadian Dental Association and was a founder of the C.D.A. Council on Dental Education.

Dr. Henry became professor of dental pathology at McGill in 1904 and continued to serve until his retirement in 1937. Prior to 1904 he was professor at the Montreal Dental College of the Dental Association of the Province of Quebec.

First Lady Elected to Provincial Office

Dr. Monica Mooney was elected a member of the Council of Dental Surgeons of New Brunswick last month. As far as is known Dr. Mooney is the first woman to hold such office in Canada. She graduated from McGill University in 1951 and is presently engaged in school dental services in the city of St. John, N.B.

Supporting Members of F.D.I.

Members of the Canadian Dental Association are invited to become Supporting Members of the International Dental Federation. The federation is made up of some 39 national dental associations of which the Canadian Dental Association is one. As the name implies, the federation does valuable work for the dental profession on the international level. The federation is, in part, supported by the annual subscription of individual Supporting Members. Memberships for 1956 are now being solicited. The annual fee is \$10.00 which includes subscription to F.D.I. quarterly journal. The C.D.A. acts as National Treasurer for the F.D.I. Those desiring to support the F.D.I. should send the above fee to:

The Secretary,
234 St. George Street,
Toronto, Ont.
Canadian Dental Association,

The Library

Additions

AMERICAN MEDICAL ASSOCIATION: Council on Pharmacy and Chemistry. New and non-official remedies. 1955. 653 pp.
BLACKWELL, R. E.: Black's Operative Dentistry. 9th ed. 1955. Vol. I—Pathology of the hard tissues of the teeth, oral diag-

nosis. 355 pp. illus. Vol. II — Technical procedures in making restorations in the teeth. 458 pp. illus.
COELHO, D. H., & RIESER, J. M.: A complete fixed procedure. Rev. ed. 1955. 150 pp. illus.
GROSSMAN, L. I.: Root canal therapy. 4th ed. rev. 1955. 399 pp. illus.

Economic Security

All Men are Mortal

PART D: The Economic Cost of Disability

by E. I. R. WILLIAMSON, M.B.E., B.P.A., F.R. Econ. S., Consulting Economist,
and Administrator of the C.D.A. Plan.

The first three articles of this series analysing the "Canadian Sickness Survey" have dealt with the statistical evidence on causes, incidence, and duration of disability. Consideration now must turn to some study of the economic cost of disability. There are two aspects: The positive — the cost of treatment and care; the negative—the loss of income entailed.

Unless otherwise indicated, all statistics in this article are taken from the "Canadian Sickness Survey" of the Dominion Bureau of Statistics and the Department of National Health and Welfare. (Queen's Printer, Ottawa, 1955).

The "Survey" estimates that 3,934,000 families, or 86.4% of the national total of 4,555,000, incurred expenditure of some kind for health with an annual national expenditure of \$373,800,000, of which \$88,400,000 is for "Prepayment Plans" — insurance of some form or extent — and \$285,400,000 in direct expenditures for hospitalization, physicians, surgeons, drugs, etc.

This is an average expenditure of \$95.00 per year for each family incurring any expenditure at all. It is important to note that these figures reflect actual cost to each family and that the bills defrayed by the prepayment insurance plans are *not* included.

Narrowing consideration from national averages to the statistics for families in the Income Group \$5,000 and over — into which group most professional men fall — we find that the number of families incurring some form of expenditure rises to 96.7% of all families in that Income Group, and that the average expenditure rises to \$163.80. Of this, \$57.00 represents the cost of health insurance and \$106.80

direct payments for services, drugs, and appliances.

In this Income Group, \$5,000 and over, it is further estimated that 61,000 families — as one in every four — incurred expenditures during the year in excess of \$200, and 14,000 families — one in twenty — expenditures in excess of \$500.

Assuming the applicability of these statistics to the Dental Profession, the annual cost of health care and services to the total membership exceeds \$800,000 with 1,192 members incurring individual expenditures exceeding \$200 and 276 members, expenditures exceeding \$500.

Turning now to the problem of economic loss through cessation of income, the particular exposure of the professional man to this hazard must be the basis of examination (See August, 1954, issue of the "Journal" at p. 447). When compelled to cease practice, the cessation of professional income is complete.

There is the further factor that disability does not necessarily and inevitably impair life expectancy: The disabled individual may well be sheltered from dangers cutting down the able-bodied. This entails the need for additional income beyond age 65, which need approached \$49,350 over the requirements given above.

These sums represent an appreciable proportion of the total income potential of the professional man — say \$250,000 as a minimum — and it is obvious that the economic needs thrust upon him by disability cannot be met by accumulated savings: only through Insurance can these be met, and the professional man must be certain that the insurance which he purchases does, in fact, provide the protection which it is statistically certain he must possess.

The Corps

At the Convocation of the American College of Dentists in San Francisco on Sunday, October 16, 1955, a Fellowship was conferred on Brigadier E. M. Wansbrough.

Brigadier Wansbrough attended a Mess dinner held by the Commanding Officer and Officers of No. 55 Dental Unit in London on December 2nd. Presentation of the Canadian Forces Decoration was made to Dr. S. A. Moore, Honorary Lieutenant-Colonel of the R.C.D.C.

Army Headquarters has recently announced the promotion of Lt.-Col. G. B. Shillington to the rank of Colonel. Colonel Shillington will continue to Command No. 11 Company R.C.D.C. with Headquarters in Edmonton, Alberta.

Colonel Shillington was born in Blenheim, Ontario, in December, 1910. He received his early education there and graduated from the University of Toronto in 1934. After a year's post-graduate study in Boston he returned to Toronto to serve on the staff of the Royal College of Dental Surgeons and received the degree of B.Sc.D. in 1937. He was appointed to the Royal Canadian Dental Corps in October, 1939, proceeding overseas in June, 1940, serving in the United Kingdom and Egypt. Since the war, in addition to a tour of service at Army Headquarters, he has commanded the R.C.D.C. School and his present unit.

Colonel Shillington is married and has two children.

Lt.-Col. T. L. Marsh, accompanied by his wife and children, returned from Germany where he commanded No. 1 Field Dental Unit for two years. He has again been ap-

pointed Dental Public Health Officer in the Directorate.

Lt.-Col. O. W. Crummey has succeeded Col. Marsh in Germany as Commanding Officer of No. 1 Field Dental Unit.

Lt.-Col. W. R. Cunningham has completed an eleven-week course on Crown and Bridge and allied subjects at the U.S. Naval Dental School, Bethesda, Maryland. He has returned to Camp Borden.

The Annual Garrison Ball was held in Ottawa on the second of December. It was a gala affair under the immediate patronage of the Governor-General. Attending from the Directorate were: Colonel and Mrs. C. B. H. Climo, Lt.-Col. and Mrs. J. A. MacGowan, Lt.-Col. and Mrs. T. L. Marsh, Lt.-Col. and Mrs. J. K. McNally and Major and Mrs. R. H. G. Cunningham.

A Senior Officers' Qualifying Course for Militia officers was held at the R.C.D.C. School in September, 1955. The purpose of this two-weeks' course is to qualify Majors of the Militia for promotion.

The following ten officers attended:
Major R. H. Blaquiere—Edmonton, Alberta
Major H. F. Bonnell—Saint John, N.B.
Major H. J. Chartrand—Ottawa, Ontario
Major G. W. Cornell—Chatham, Ontario
Major A. H. Gunning—Victoria, B.C.
Major J. E. Hallett—Marathon, Ontario
Major J. E. Hardy—Amherst, Nova Scotia
Major J. G. Holbrook—Hamilton, Ontario
Major M. C. Parks—St. Catharines, Ontario
Major G. L. Ramsay—Saint John, N.B.

The following officers have been released from the Royal Canadian Dental Corps:

Major H. C. Cole; Major F. B. Lavoie;
Capt. P. A. Gelinis; Capt. R. G. McNab;
Capt. R. L. Villard.

R.C.D.C. Association

Major H. J. Chartrand of 54 Dental Unit has successfully completed the Senior Officers' Course at the R.C.D.C. School, Ottawa.

At a function held at 54 Dental Unit HQ at Wallis House on Nov. 10, 1955, Lt.-Col. G. K. Clarke, Unit CO, presented a suitably inscribed Stein to Brig. M. B. K. Gordon, former Group Commander 12 Militia Group. The presentation was a memento of his former association with 54 Dental Unit.

Officers of 54 Dental Unit and friends, entertained Capt. Cliff Murchison at a function held at the Composite Officers' Mess, Wallis House, Ottawa, on Thursday, Nov. 10, 1955, prior to his marriage. Capt. Murchison was presented with several appropriate gifts and received many expressions of good wishes from his numerous friends.

On Friday, Nov. 25, 1955, the Officers of

No. 54 Dental Unit entertained their CO, Lt.-Col. G. K. Clarke and Mrs. Clarke at a Mess dinner held at Wallis House.

The occasion was to bid farewell to Lt.-Col. and Mrs. Clarke who are leaving shortly to take up residence at Burlington, Ont. Major C. E. Woods, 2 i/c of the Unit, presented Lt.-Col. Clarke with an engraved stein, and to Mrs. Clarke a jewelled replica of the R.C.D.C. Crest, on behalf of the officers present. Chairman for the Mess dinner was Major H. J. Chartrand. Visiting officers accompanied by their wives were:

Brig. E. M. Wansbrough and Mrs. Wansbrough; Col. C. B. Climo and Mrs. Climo; Lt.-Col. I. A. L. Millar and Mrs. Millar; Lt.-Col. H. R. McLaren and Mrs. McLaren; Major G. H. Hamilton and Mrs. Hamilton; Major A. T. Roger and Mrs. Roger; Major E. Gluck and Mrs. Gluck, CO Coy RCAS CA (M); Major A. C. Stinson and Mrs. Stinson.
J. Thomas

The Provinces

British Columbia

Dr. William Miller, president of the **College of Dental Surgeons of B.C.**, who for several years has been pursuing the subjects of the course by private study, was awarded the B.A. degree at the Fall Convocation of U.B.C.—29 years after he graduated in dentistry.

The annual convention planned by the **B.C. Dental Association** for May 17-19 in the Hotel Vancouver will feature a three-day condensed course in office efficiency with Dr. Cecil H. Bliss of Iowa and Drs. Rex Ingraham and R. Eilson of Hollywood giving lectures on dental economics and high speed cutting instruments.

The Association has overcome the difficulty of securing future convention space by making reservations for the second weekend of May for the next five years in the Hotel Vancouver and the Empress Hotel in Victoria. It is felt that this announcement will help to avoid interference with other conventions which might otherwise be planned for these weekends.

Public Relations funds this year are being spent on paid advertisements in B.C. newspapers. These articles are those written by Dr. Leslie Robinson, which he has rewritten and condensed to fit into the newspaper space.

Dental Health week, February 5 to 11, will entail another expenditure from Public Relations funds. An elaborate program is being arranged by Dr. W. M. Joiner and it will include publicity by radio, TV, magazines, posters, school lectures, and several other outlets.

Several districts in British Columbia are without dental service. In order to encourage dentists to serve outlying districts the **Department of Health and Welfare** has offered to provide on free loan a set of transportable dental equipment on the understanding that it will be used in conjunction with preventive dental clinics for the younger children. Should arrangements be made by a dentist for visits of not less than six-monthly intervals, the Department considers an application for travel allowance to the extent of one-way fare for both the dentist and his assistant.

At its November meeting the **Victoria and District Dental Society** listened to a lecture

by Dr. Hamilton Simmons of Vancouver on "Oral Surgery". Slides and models were used to show the general practitioner how to remove impacted teeth with a minimum of traumatic injury to the patient. The importance of the dentist in maxillofacial surgical teams was stressed.

The **Vancouver and District Dental Society** held its December meeting with a gratifying turnout of enthusiasts. The afternoon and evening speaker was Dr. Merrill G. Swenson of Portland, Oregon, whose name is synonymous with prosthetic dentistry. Teacher, author and clinician, he spoke from his vast experience in this vital field of our work.

The fall golf tournament of the Vancouver and District Dental Society was held at the Burquitlen course where 55 braved the weather and threat of rain. For the first time an invitation was issued to the Dental Laboratory Association and several of their members turned out to play.

D. H. M.

About 25 dentists attended a one-day clinic of the **Interior Dental Society** at the Hotel Prince Charles recently.

Guest speaker was Dr. J. W. Neilson of the University of Washington, Seattle, who spoke on "Periodontia".

Two clinics were held, one in the afternoon and the other in the evening.

Next year's clinic will be held at Kamloops.

In the election of officers, Dr. J. Cameron of Kamloops was named president, Dr. B. Bishop of Vernon, vice-president, Dr. L. English of Kamloops, secretary-treasurer, and directors are Dr. W. A. McIver of Penticton, and Dr. K. Geis of Kelowna.

Retiring president is Dr. Fred Netherton of Penticton and retiring secretary-treasurer Dr. McIver.

Manitoba

The November meeting of the **Winnipeg Dental Society** was held November 17th at the Royal Alexandra Hotel. This meeting was featured by the appearance of four prominent Winnipeg medical men as the guest clinicians. These men, all specialists in different medical fields, each made an hour and a half presentation emphasizing the part played by dentists in relation to these medical conditions.

DR. S. W. PENNER—Pathology.

Dr. Penner is Pathologist to the Winnipeg General Hospital and assistant Professor of Pathology, University of Manitoba. He covered many aspects of pathology as it affected dentistry, bringing out the importance of doing a biopsy examinations where possible and also the proper method of doing these. He reviewed the causes of death he had seen when doing autopsies of dental deaths. He warned against the dangers of over-exposure to radiation and by means of slides showed how these many conditions affect the various tissue cells.

DR. R. L. COOKE—Cancer in the head and neck region.

Dr. Cooke has done extensive post graduate work both in London, England and in New York City. He is a F.R.C.S. Canada and England and a diplomate American Board of Surgery. He felt that we should all cultivate and raise our "Index of Suspicions". Many oral and neck cancer conditions are painless at first and can only be picked up by a dentist in routine examinations, as the patient has no reason to visit the Medical Office. Dr. Cooke brought out that approximately 4.7% of cancer deaths in males are caused by cancer of the mouth and pharynx. This drops to 1% for females. He also emphasized the necessity of taking a biopsy section in any suspicious case.

DR. H. MEDOVY—Paediatrics.

Dr. Medovy is professor of paediatrics at the University of Manitoba and paediatrician-in-chief, of the Children's Hospital. Dr. Medovy illustrated the many types of cases where the dentist and paediatrician must work together in order to rehabilitate a child patient. He spoke of the importance of a proper diet for a child and he felt that there was often some confusion here between recommendations by the dentist and by the physician, with the mother being in the middle and playing one against the other.

DR. F. A. MATHEWSON—Heart disease.

Dr. Mathewson is the assistant professor of medicine, University of Manitoba and the medical director of the Great West Life Assurance Co., of Winnipeg.

Dr. Mathewson spoke mainly about the different conditions affecting the heart. He showed by slides and drawings how these changes are brought about and how they can heal themselves if given a chance. He gave statistics correlating these various conditions to age and occupation. He felt that the main way for the dentist to avoid becoming a heart case was by the simple method of avoiding excesses in any of our

professional or personal activities, and he felt that this degree of excess was certainly an individual thing.

During the lunch period, Dr. Z. Kasloff, the Society President, conducted the monthly business meeting.

J. F. M.

New Brunswick

The everyday problem of the man in the street—trying to make ends meet—is one that is shared by universities, too.

That was the substance of an interview with Dr. A. E. Kerr, President of Dalhousie University, on his way back to Halifax after a meeting in Fredericton earlier in the day with Premier Hugh John Flemming and the provincial education minister, Hon. Claude D. Taylor.

Accompanying Dr. Kerr were Dr. James McLean, dean of the university's faculty of dentistry and Dr. C. B. Stewart, dean of Dalhousie Medical School.

The three met with the premier and Mr. Taylor on the subject of getting solid support from all Atlantic Provincial governments for medical and dental faculties at Dalhousie.

"Our position is that these faculties serve the whole Atlantic region and that they draw students from this area and send graduates back to this area," said Dr. Kerr. "We feel this is an important way for the four provinces to work together."

Fees from medical and dental students cover little more than 20 per cent of what the university has to expend on their education, he said.

"We are anxious to improve our medical and dental schools still further and require approximately \$150,000 a year more than we are getting from all sources now to achieve this ambition," said Dalhousie's president.

"We are therefore approaching the governments of the four provinces and asking them to enable us to develop as indicated."

He said because more than 50 per cent of the students come from Nova Scotia, that government is being asked for a major portion of the amount needed.

Of the Fredericton talks, Dr. Kerr said he and the two deans were received cordially and the premier promised to take the matter under consideration.

Dr. Kerr went on to say that the university authorities are anxious to keep the cost of education within the economic reach of the young persons of Dalhousie's constituency.

He mentioned also that the university is

now campaigning for \$3,500,000 to provide scholarships, improve teaching, increase staff, erect a new dental building, a men's residence and a physics building. Already, he said, the Nova Scotia government has made a substantial contribution toward erecting the new dental building, which will allow for double the present number of dental students.

Later on Dr. Kerr and Dr. McLean spoke to the Saint John Dental Society at the Union Club. They told of present expansion plans for the faculty and showed a colored film of the college.

They emphasized the Atlantic region, with a single exception, is the most poorly provided area in Canada, for dentists, on a per capita basis.

Also, they paid tribute to work being done by a new faculty member, Dr. Robert Bingham of Moncton, last year president of the New Brunswick Dental Society.

While they were speaking to dentists, the dean of the medical school, Dr. C. B. Stewart, was visiting the Saint John General Hospital which yearly receives a regular quota of internes from Dalhousie.

The sixtieth annual meeting of the **New Brunswick Dental Society** took place at the Admiral Beatty Hotel, Saint John on the 29th and 30th of October. The president, Dr. R. H. Bingham of Moncton, was in the chair. He welcomed two distinguished guests to the meeting, namely the President of the C.D.A., Dr. R. R. McIntyre of Calgary and the C.D.A. secretary, Dr. D. W. Gullett. The evening was spent in a panel discussion of C.D.A. items. This was a new approach and by a series of questions and answers much information was produced. Those on the panel were Dr. Bingham, moderator, Drs. McIntyre, Gullett, Coughlan and Steeves.

At the annual meeting routine matters were discussed. It was decided to continue to oppose the illegal practitioners and additional members were added to the legal committee. Support was given to the formation of a Maritime Dental Association whose purpose would be to have an annual maritime convention. Congratulations were extended to Dr. Bingham on his recent appointment to the teaching staff of the Faculty of Dentistry, Dalhousie University. The fees to the C.D.A. were raised from fifteen dollars to twenty-five dollars for all practising dentists in the province. The financial position of the society was considered very good.

The election of officers resulted as follows:

President: Dr. E. J. Leger;
Vice Pres.: Dr. D. A. Somerville;
Sec. Treas.: Dr. S. K. Wetmore;
C.D.A.: Dr. H. B. Fleming;
NDEB.: Dr. J. F. Edgecombe;

Council Members: Drs. Jos. Levesque; D. C. Steeves; G. L. Ramsay; G. G. Orser; A. Chouinard; R. B. DeWare; Monica Mooney; C. A. Hayward; P. M. Clarke; A. Steurman.

J. F. E.

A dinner meeting of the **Saint John Dental Society** was held at the Union Club on the ninth of November. The guest speakers were Dr. A. E. Kerr, president of Dalhousie University and Dr. James McLean, Dean of the Faculty of Dentistry. Dr. Kerr gave a talk on the University and told of the drive now taking place for \$3,500,000 for the University. He stated a new building would be forthcoming for the dental faculty with actual construction to commence next year. Dr. McLean spoke of the Dental Faculty and their drive for funds. He showed a coloured movie on the University which was very instructive and interesting. He also displayed the architect's rough floor plans for the new dental building. Dr. Samson, the president, thanked the guests for their interest in coming to the meeting and giving such a comprehensive picture of the University and the dental college in particular.

J. F. E.

Alberta

Dr. J. A. Duncan, director of the **Calgary dental services**, adopts electronics as a streamlined method of recording information obtained from a current survey.

By the end of the survey, he expects to have important conclusions on the state of teeth in every age group of Calgary school children.

Assisted by housewives from the Central Volunteer Bureau, the 45-strong team will visit every school in the city and examine every tenth child.

Dr. Duncan explained that the "guinea-pigs" are carefully selected to give an accurate test check. A number is drawn from a hat and then every 10th child is picked from the school roll.

This particular survey is anonymous as far as individual results are concerned. Children will not be informed of the state of their teeth, but the total results will be tabulated for an average condition.

Dr. Duncan said the conclusions will provide a datum point for future programs. School dental work will be reorganized if necessary and future surveys will show the success or otherwise of the program.

The statistics will be sorted by the city's electric light department on its electronic business machines.

The Pensioners Dental Treatment Services, a unique plan operated by the Alberta dental profession and the provincial government, this year extended its services by 2,400 persons, it was announced at the semi-annual meeting of the board of the **Alberta Dental Association** at the Palliser Hotel.

The meeting opened under the chairmanship of Dr. A. C. Ahrens of Lethbridge, President of the group.

The Dental Treatment plan offers free treatment to more than 36,000 Albertans, including all pensioners of the provincial government; the blind, their wives and dependent children; those receiving mothers' allowance and old age security pensioners on a means test.

No other plan of its kind is in operation on this continent.

During the meeting, plans were made for Dental Health Week which will be conducted the first week in March. The Association stressed the need for continued education of the public in various methods of preventing tooth decay. An Edmonton dentist, Dr. K. A. Burnham, was appointed chairman of the campaign.

The Board instituted a mediation committee to which patients may take grievances directly to dental authorities. The members of the committee represent each district of the provinces.

Plans were discussed for the joint meeting of the Canadian Dental Association and the Alberta Dental Association at Banff next June 3 to 6. Dr. Baden Powell of Calgary is in charge of arrangements.

The Edmonton and District Dental Society held its November Meeting at the Seven Seas. President Alan D. Fee occupied the chair.

Dr. D. MacGregor introduced the speaker, Dr. George Brass. Dr. Brass gave a very interesting talk on "Amalgam".

George has a very thorough knowledge of his subject and inspires his listeners to further improve their technique in this basic field of dentistry.

Dr. Sperry Fraser received the hearty

congratulations of all at the meeting. Recently he received his fellowship in the American College of Dentists at the American Dental Association meeting in San Francisco, California.

The December meeting of the **Edmonton and District Dental Society** was held on December 6th at the Seven Seas. The meeting was conducted by President Alan Fee.

Dr. W. Scott Hamilton introduced to us Dr. Nash, Professor of Pharmacology at the University of Alberta.

Dr. C. D. Husband of Red Deer, Alberta, and Dr. R. VanAlstine of Edmonton were guest speakers jointly, on the subject of "Local Anaesthetics". Dr. Husband presented an "Evaluation of Local Anaesthetics" and ably demonstrated his wide knowledge of the subject based upon many years of study and private research.

Dr. VanAlstine dealt with the "Untoward Action of Local Anaesthetics, Vasoconstrictors and Injection Technique, and Potency, Toxicity and Irritability of Anaesthetics". Dr. VanAlstine is demonstrating that he is a thorough operator and keen student of Dental Research and techniques.

R.C.S.

The **Calgary and District Dental Society** held its regular monthly dinner meeting on November 7, 1955 in the Sun Room of the Palliser Hotel. Dr. W. Ross Upton presided.

A very lively discussion followed the delivery of a Report on Topical Fluoridation prepared by Dr. J. W. Clay, Dr. James Zimmerman and Dr. R. R. McIntyre. A decision on endorsement of the plan whereby a program of topical fluoridation would be carried on through the offices of the Director of Dental Services for Calgary and the Calgary School System by volunteer services of local practitioners was deferred until the next meeting to allow for further consideration of the plan.

Dr. Art Steeves, Dr. Baden Powell, Dr. James Zimmerman and Dr. Henry Freeland presented a panel discussion on the many ramifications of the provocative "Section 29" of the Alberta Health Act. A history of the problems of dealing with the flagrant abuse of this already obtuse Section 29—a history of the illegal practise, in effect, of prosthetic dentistry by "independent laboratories" was described to the meeting. The members were told of representations to the Cabinet of the provincial government on this matter and of legal actions taken to bring a halt to these illegal practises,

Quebec

The first meeting of the **Montreal Endodontia Society** was held on October the 21st 1955, in the Medical Building of McGill University with Dr. E. S. Dorion presiding.

Dr. J. P. Lanthier introduced the speaker, Dr. J. Healy, who is president of the American Association of Endodontists and chief of Endodontics at Indiana University.

Dr. Healy started his lecture by describing the improvement in endodontics in recent years.

- 1) Improvements in pharmaceutical remedies.
- 2) Improvements in culture taking (increase in use).
- 3) Improvements in effective ways of filling canal.
- 4) Improvements in refutation of focal infection.

Dr. H. J. Healy insisted on the proper selection of cases. (Condition of patient, accessibility of root apices, value of the tooth, and ability of practitioner.)

He enumerated the different drugs used in endodontia, and listed the sequel of treatment in different cases, (necrosis, pulpitis.)

Our lecturer gave us a formula for obtaining the true length of the tooth.

AP (length of point) /IP (image of point)=

XT (length of tooth) /IT (image of tooth).

He concluded by mentioning the different restorations possible on a pulpless tooth.

Dr. G. Zimmerman thanked the speaker for his interesting paper.

J.B.

Dr. James McCutcheon, former gold medalist of the Faculty of Dentistry, has been appointed Acting Dean, it was announced recently on behalf of the Board of Governors of McGill University, by Principal F. Cyril James.

Dr. McCutcheon, a native of Elizabeth, N.J., graduated from McGill in 1945 with first rank standing and the Montreal Dental Club Gold medal, the College of Dental Surgeons of Quebec first prize for the highest standing in practical examinations of the final year. He also obtained a B.A. at McGill, and an M.Sc. at the University of Michigan.

In 1948 he joined the staff as Associate Professor of Prosthetic Dentistry, becoming the first full-time member of the staff.

The monthly dinner meeting of the **Montreal Dental Club** was held on November 21, at the Windsor Hotel.

Following the dinner, the club was host to Montreal City Councillors, representatives of the Public Health Division, Service clubs, Welfare Agencies, Société Dentaire Mount Royal Dental Club and the Junior League, to hear Dr. Wesley J. Dunn, editor of the *Journal of the Canadian Dental Association*. His subject was "Fluoridation: Politics or Public Health?"

Dr. Dunn's purpose in giving the address was threefold. He sought to enunciate what he considered to be the dental profession's responsibility in respect to the encouragement of fluoridation. As well he offered certain suggestions to assist dentists in their task of education and encouragement in the communities in which they reside. And lastly, dealt with some of the main objections and assertions which are levelled against our efforts.

The speaker stated that he believed fluoridation was one of the major advances in public health of our time. With the possible exception of the common cold, dental disease is the No. 1 public health problem of the day especially in terms of numbers of people involved.

After discussing briefly the technicalities of fluoridation, Dr. Dunn discussed the political opposition to it. His reference was to Ontario and Toronto, in particular. He felt that too often politicians are prone to feel the public pulse on matters without listening to their own inner convictions and consciences. Dr. Dunn viewed with real concern the tendency of ill-informed groups demanding the right to pass judgment on matters not within their sphere of knowledge.

In his address Dr. Dunn covered most of the main assertions directed against fluoridation, such as: "The dumping of rat poison into the water," loss of civil liberties, medical side effects, natural versus artificial fluoridation, sabotage, big business, costs, and wastage.

Following his discussion questions were asked from the floor. It was at this point that we members of the dental club were shocked out of our complacency. Amongst the invited guests was a large, well organized group of uninvited individuals, members of the Anti-Fluoridation League. These uninformed people came forth with all sorts of ridiculous questions and arguments most of which the speaker had previously discussed and answered.

Apart from an excellent presentation of facts and information by Dr. Dunn, I feel that the presence of these fanatical anti-fluoridation groups showed us, without a doubt, the struggle and opposition which we have before us in allaying the fears of the public so that fluoridation may become

a nation-wide public health procedure.
D.M.

On November 17th a few members of the **Société Dentaire of the District of Beauharnois** held a meeting to discuss problems of interest to them and to the public. It was recommended to ask the members of the city hall to adopt fluoridation of the water.

Many problems were discussed and the dentists have decided to hold a meeting in January to study many new aspects in dentistry.

Present were: Dr. Armand Clairmont, president; Dr. A. Boisvert, vice-president; Dr. Marc Trepanier, secretary; Dr. A. Patenaude, director, Dr. Gilles Amiot, Dr. Richard Sicotte.

The aim of the society is to keep up their studies to give the best service to their patients.

The members belonging to the **Société Dentaire of the Beauharnois district** are the following: Dr. Armand Clairmont, Dr. A. Boisvert, Dr. Marc Trepanier, Dr. A. McCabe, Dr. A. Patenaude, Dr. E. Caza, Dr. M. Lefebvre, Dr. H. E. Purcell, Dr. A. Marchand.

In the near future a public meeting will be held to give lectures on dental hygiene. Motion pictures illustrating interesting subjects will also be presented, and eminent speakers will talk on dental hygiene.

Nova Scotia

The **Nova Scotia Dental Association** was host to Dr. R. R. McIntyre and Dr. Don W. Gullett, President and Secretary respectively of the Canadian Dental Association, on the occasion of their visit to Halifax on October 31st. The province was well represented with dentists from Halifax, Dartmouth, Spryfield, Bedford, Middle Musquodibit, Digby, Truro, Pictou, Antigonish, New Waterford, and the Dental Corps in attendance.

The panel discussions, and questions arising therefrom, brought forth much interesting information respecting our national organization. It is a genuine pleasure to express our sincere appreciation of the fine service being rendered by our President and Secretary.

Using slides and photographs of actual cases to illustrate his talk Dr. Alan Currie, a Halifax surgeon, addressed the **Halifax County Dental Society**, recently on the topic "Harelip and Cleft Palate." President, Dr. Ray Epstein of Halifax, was chairman of the regular monthly meeting at the Nova Scotian Hotel. About 35 members were in

attendance. The speaker was introduced by Dr. Hugh Eaton of Halifax and thanked by the chairman.

Newfoundland

The annual meeting of the **Newfoundland Dental Society** was held recently in Corner Brook.

Those elected to office were as follows:
Past-President—Dr. R. W. Ball of Grand Falls.

President—Dr. J. M. Darcy of St. John's.
1st Vice-Pres.—Dr. W. C. King of Corner Brook.

2nd Vice-Pres.—Dr. M. F. Hogan of St. John's.

Sec. Treasurer—Dr. D. K. Peters of St. John's.

C.D.A. Governor — Dr. F. A. Janes of Corner Brook.

National Examining Board — Dr. R. W. Bell of Grand Falls.

Those elected to the various committees are:

Public Health — Drs. G. B. Curtis, Wm. Green and M. F. Hogan, chairman.

Public Relations — Drs. E. P. Kavanagh, D. A. Poole and R. A. Downton, chairman.

Ethics — Drs. M. F. Hogan, D. K. Peters and G. P. French, chairman.

Annual Meeting — Drs. H. J. Hann, R. W. Ball and A. B. Kennedy, chairman.

Health Insurance Studies Committee (new committee this year) — Drs. W. C. King, D. A. Poole and F. A. Janes, chairman.

The Associate Editor of the Journal will continue to be Dr. G. B. Curtis.

The Society unanimously approved an increase in the annual per capita grant to the Canadian Dental Association to \$25.00.

The President and Secretary of the Canadian Dental Association were guests at the meeting as were five military dentists from Harmon air force base.

D. K. P.

Ontario

Dr. John Nikiforuk was elected President of the **Brant County Dental Society** for the 1955-56 season at a meeting at the Brantford Club recently.

Other officers elected were: Dr. Douglas J. Badke, Vice-President; Dr. James E. Peacock, Secretary-Treasurer; Dr. Earl Smith and Dr. J. H. Moyle, counsellors.

A clinic on the value of hypnotism in dentistry today, was given by Dr. Harold Mason of Galt, who presented a practical demonstration on three patients from his practice in Galt.

In the two-hour clinic, he explained that the subject of hypnotism in dentistry is a wide and varied one, and he stressed the

seriousness of the practice and the need for special training.

and referred briefly to his early years in Orillia.

At the first regular fall meeting of the **London and District Dental Society** afternoon table clinics were presented by members of the Detroit Denture Club. Dr. S. Anderson spoke on "Gumless Esthetics"; Dr. P. Kowalchuck on "Immediate Dentures"; Dr. A. J. Richards on "Denture Troubles"; and Dr. W. Stasiw on "Tooth Selection".

After the evening banquet Dr. A. J. Richards, Sr., Chief of the Denture Division at Harper's Hospital in Detroit, spoke on "Problems in Complete Dentures."

The executive committee named for the coming year consists of:

President—Dr. R. J. Sutherland

Vice-President—Dr. A. J. Harris

Secretary—Dr. W. H. Mason

Treasurer—Dr. D. E. Whiteman

W.H.M.

At a dinner held recently at the Birchmere Hotel, the **Orillia Dental Society** honoured Dr. Alec McLean who recently retired after 58 years of dental practice.

Dr. J. D. Ledlow, chairman of the Society, presided at the meeting which was attended by 17 dentists and their wives, from Orillia, Coldwater and Gravenhurst.

Following the dinner Dr. Ledlow called on Dr. Mel Seymour to make the presentation of a fishing rod and reel to Dr. McLean on behalf of his associates.

Dr. Seymour referred to Dr. McLean's unusual achievement of 58 years of dentistry in Orillia. He also expressed his personal appreciation for the influence Dr. McLean has had in his own life, first in persuading him to enter the field of dentistry and second for his valued advice and moral support during his years in municipal office on the Town Council and as Mayor.

"When I heard that Dr. Alec was retiring," said Dr. Seymour, "I thought of the number of people both living and dead who have benefitted from his years of service to the public. And then I asked myself this question—how many people have had their lives prolonged because of his treatment of illness due to focal infection."

"I'm certain," concluded Dr. Seymour, "that, as a past Mayor of Orillia, I have the right to extend to you, Dr. McLean, the congratulations and thanks not only of your confreres but of all the people of Orillia."

In replying, Dr. McLean thanked Dr. Seymour and those present for their kindness

Three of the dentists present at the seminar held in Orillia recently by the **Simcoe-Muskoka Dental Society** were Dr. Harold Shepherd, guest speaker and representative of the Board of Governors of the Ontario Dental Association; Dr. Paul Williams, chairman of the district dental seminar committee, and Dr. E. A. White, chairman of the dental public health committee of the Ontario Dental Association. The seminar concluded with a special dinner held at the Orillia Hotel.

The **Kingston Dental Society** held a joint meeting with the Jefferson County Dental Society at the Walford Hotel, Watertown, New York on Thursday, November the 10th.

The speaker was Dr. W. F. Walford, professor of periodontology at the Faculty of Dentistry in McGill University. He presented a clinic in the afternoon and a discussion after dinner on the equilibration of the teeth for better appearance and function.

Canadian dentists were present from Kingston and Brockville and their appreciation of the exceptionally fine hospitality of the Watertown dentists was expressed by Dr. John Lyon, the president of the Kingston Dental Society.

At the previous meeting of the Kingston dentists, the speaker was Dr. Don Hult who is a specialist in orthodontics, practising in Kingston. His subject was cleft palate rehabilitation which was illustrated by a coloured movie.

Dentists from Sudbury and district towns spent Oct. 21st attending the **fourth annual post-graduate dental seminar** program presented by the Ontario Dental Association's dental public health committee, in co-operation with the faculty of dentistry of the University of Toronto.

The seminar was held in Sudbury and lasted for two days. Dr. H. T. Donnelly was chairman of the district dental seminar committee.

The first day was given over to general care for dental disease, while the following day's clinics dealt with dental health for children. Dr. D. J. E. Mitchell and Dr. C. D. Beierl, journeyed from Toronto to conduct the clinics. Dr. Mitchell is head of the dental department, orthodontic research division of the Toronto Hospital for Sick Children, while Dr. Beierl is a member of the faculty of dentistry, University of Toronto.

Dr. George A. Morgan of Toronto was elected a Councillor at Large at the recent meeting of the **American Academy of Oral Roentgenology** held in conjunction with the American Dental Association meeting in San Francisco.

The **Annual Winter Clinic of the Toronto Academy of Dentistry** was held on Thursday, November 24th, in the Royal York Hotel.

Once again the tireless efforts of a few individuals comprising the Academy executive and sub-committees, have produced another highly successful Winter Clinic programme. As chairman and president-elect Dr. Harvey Milburn skilfully organized and captained the day's happenings with flawless and veteran dexterity. Officiating with him were Dr. J. Bevan King president, Dr. R. W. Marshall secretary, Dr. W. A. Weir treasurer and Dr. W. J. Smith past president. It is to be hoped that these officers along with their equally efficient committee members, will realize that the procedures of this day were gratefully received with a widespread feeling of professional and social satisfaction. The completeness of this programme was such that even the most demanding practitioner of dentistry would be benefited and pleased by his attendance.

It is difficult within a limited space to describe each clinical presentation; however the papers of the day are impressive even when tabulated. Of the fifteen group clinics and presentations, twelve were presented twice during the day. In the field of Oral Surgery there were two clinics. One of these entitled "Oral Surgery in General" was ably presented by young Dr. T. B. Van de Mark who graciously took time out from his undergraduate studies in Medicine in order to participate. The other in this field was an Oral Surgery Group Film of coloured motion pictures on General Anaesthesia. In an allied subject Dr. R. E. Diprose gave a helpful paper on "Radiographic Interpretation with Particular Reference to Dental Problems Associated with the Maxillary Sinus". Dr. G. E. Hare masterfully shed light upon the subject "Emergency Endodontic Treatment in Accidents to Children". On another phase of dentistry for children contributive suggestions were forthcoming in an interesting paper entitled "Space Maintenance" presented by Dr. M. G. Boyes. The complicated subject of "Protrusive Upper Anteriors" was presented with youthful freshness and welcomed clarity by Dr. J. A. Langmaid. "Silver Amalgam Restorations" were given a new lustre in the commendably organized

paper by Dr. D. B. McAdam. The "Control of Some Common Acute Oral Infections" was the title of Dr. J. F. Speck's paper given with his usual conciseness and admired understanding. Dr. H. A. Hunter covered his subject "A Planned Approach in Oral Diagnosis" in studious detail and despatch. A panel under the proficient direction of Dr. F. H. Compton elaborated upon the always provocative subject of "Dental Public Health and what we are doing about it". The old chestnuts plastic and porcelain were given an up to date roasting by Dr. J. R. Fletcher in his "Consideration of some of the Latest Research Findings on Plastic Filling Materials and Resin Cements in Comparison with Porcelain". The detailed attentions of Dr. C. H. Moses were astutely focused upon the subject of "Complete Denture Procedure Following the Finished Impressions". Dr. R. A. Clappison in his presentation "From Preparation to Cementation in Inlay Crown and Bridge Work" stimulated the desire to achieve technical excellence. Dr. Cecil H. Summerfeldt long since endeared among his confreres, returned to the dental battlefield casting before him helpful suggestions in "Your Investment Programme", which were eagerly caught in the outstretched hands of his envious listeners. The useful alliance of photography in dentistry was enjoyably presented by a welcomed guest. Mr. R. Frost, in his paper the "Application of Photography in Dentistry and as a Hobby".

The luncheon address given by the esteemed Reverend John Short, M.A., Ph.D., D.D., from Toronto was unique in many respects chiefly because it was helpful without being stern, and constructive without being critical. With subtlety Dr. Short created the realization that each of us has a second and equally important job—that of learning to live for and with our fellow men.

At the conclusion of the regular essay programme was shown a sound motion picture entitled "Caribbean Cruise to the West Indies and South America" presented by Dr. S. Copeland. This was followed by a fellowship hour. The dinner hour was highlighted by the Billy O'Connor Show. Table Clinics, twenty-one in number, commenced at eight in the evening. The majority of these clinics were presented by dentists on the subjects of Operative Dentistry, Paedodontics, Prosthodontics, Radiodontics, Orthodontics, Endodontics and Photography. Also participating in the table clinics were Faculty of Dentistry members and Ontario Dental Nurses and Assistants' Association members. To complete the picture were twenty-four commercial exhibits presented

with their accustomed help and friendliness. E.R.B.

Dr. Abe Slone recently was elected president of the **Ottawa Dental Society** at the organization's first monthly meeting of the season, held in the Chateau Laurier. He succeeds Dr. M. M. Derrick.

Dr. Roland Lamb directed an afternoon table demonstration and was later the guest speaker at a dinner attended by some 100 dentists.

The following complete the new slate of officers: Vice-president, Dr. W. D. Bryce; secretary-treasurer, Dr. H. B. Squires; executive committee members, Dr. J. H. Young, Dr. J. C. Callingham, Dr. J. C. McCavour, Dr. W. G. Joynt, Lt.-Col. I. L. Millar, Dr. E. J. Fox, Dr. Charles Blaney and Dr. C. H. Bugden.

Presiding at the annual dinner of the **Academy of Dentistry, Toronto**, was the

President Dr. J. Bevan King. The dinner was held as usual in the Concert Hall of the Royal York on October 24th, 1955. Dr. King in his opening remarks reviewed the work of the Academy and stressed the need for every dentist in Toronto, not only to support the Academy, but to enlist his confreres to do so also. Mayor Nathan Phillips brought greetings from the City of Toronto. The Hon. MacKinnon Phillips, Minister of Health for Ontario spoke briefly. By a fortunate coincidence Sir William Kelsey-Fry was in Toronto at the time of the meeting and he brought good wishes from the dentists of Great Britain. He also asked that more Canadian dentists do post-graduate work in England. Dr. W. J. Smith was made a member of the Past Presidents' Club and was presented with his pin at the banquet. The highlight of the evening was a remarkable address by the guest speaker Dr. A. B. B. Moore of Victoria College.

K.P.

British Commonwealth News

Two points that attracted particular attention in the second reading debate on the **Dentists Bill** on November 4 were the substantial fall in the number of dentists in training and the profession's objections to the introduction of ancillaries.

The Bill provides for the foundation of a General Dental Council on much the same lines as the General Medical Council, and including six members from the G.M.C., who would have particular responsibilities in regard to education and examinations. These proposals to make the dental profession self-governing were generally accepted, apart from some reservations on whether there was sufficient representation on the council for "the man in the surgery," and the Minister of Health expressed his readiness to consider suggestions about the composition of the governing body.

On the present and future supply of dentists, however, Mr. MacLeod stated that the present ratio was one to every 3,400 (men, women, and children) in the population. The number engaged in the priority services had been climbing steadily, and was now about 1,000, which was not more than half, possibly not more than a third, of the number needed to give a thoroughly efficient service. The crux of the recruitment problem was connected with the recommenda-

tion of the Teviot Committee that the Government should try to get as quickly as possible an annual intake of 900 students into the dental schools. Not only had it been impossible to get near that figure, but he saw no chance in present circumstances of doing so. Indeed, they would be lucky to hold it at 450. The steady decline in numbers since 1947-8, when the profession was enjoying a very high standard of remuneration, showed that no single cause was at work. Because of the Government's concern over recruitment the McNair Committee had been appointed to go into the matter.

The two proposals in the Bill on the employment of ancillary workers were that oral hygienists should be able to work under the strict supervision of a registered dentist, and the employment of dental nurses on the lines of New Zealand practice. The proposal was, Mr. MacLeod said, that for a limited list of schoolchildren the dental ancillary worker would be able to extract "milk teeth" and carry out fillings, under the direction of a registered dentist and regulations made by the General Council. There was no intention of bringing dental technicians within the scope of ancillary workers.

British Medical Journal
November 12, 1955.

General News

The ninety-sixth convention of the **American Dental Association** held in San Francisco in October had a record attendance of 14,741. Dr. Daniel F. Lynch, Washington, D.C., president of the ADA, opened the meeting on October 17th, 1955. Dr. Lynch, on arrival at the airport, was met by the mayor of the city and was given the honor of having a motorcycle escort to the convention headquarters in the Fairmont hotel.

Many annual meetings of special groups had been held during the week preceding the Convention.

The visiting dentists and their families were overwhelmed with greetings and made to feel most welcome in California. President Eisenhower, in a letter, sent warm greetings to the members of the ADA and best wishes for an enjoyable and successful convention.

The ADA members were welcomed by the people of San Francisco with many banners and window displays. Golden Gate park had a huge, colorful welcome mat fashioned with 15,000 plants. Visiting dentists were invited to speak to many service clubs throughout the area. Kiwanis clubs, Rotarians, Lions, and many other groups requested dental speakers.

The procedure of registering, getting necessary information, and of selecting one's area of interest was facilitated by much previous thought and work by our hosts. On registering, each member was given a name badge and an easily read and well designed program of events both social and scientific.

The scientific sessions were held in the Civic Auditorium, and the meetings of delegates, trustees and other special groups were held in the glamorous downtown hotels: Fairmont, St. Francis, Palace, Clift, Sir Francis Drake, and others. The general assembly met in the War Memorial Veterans' Auditorium.

The huge convention proceeded with unbelievable smoothness. Part of this smoothly operating machine was the little newspaper, the ADA-Daily Bulletin. In it each morning could be found the schedule for the day and pictures of interesting people and happenings. In one edition was a picture of Dr. R. R. McIntyre, Calgary, President of the Canadian Dental Association, and Dr. Don Gullett, Toronto, secretary of the CDA. In another edition was a picture of Dr. Harold Hillenbrand, secretary of the ADA, and Dr. Lynch, president of ADA.

The clinics, essays, and panel discussions covered all phases of dentistry; ideas new

and old, techniques ordinary and unusual, modern and futuristic. One prize-winning exhibit, by the Army Dental Corps, was titled "The role of the dentist in atomic disaster". An unusual pamphlet was "Dentistry for the cerebral palsied patient".

The long corridors of commercial exhibits were always well attended, as were the table exhibits in the entrance lobby. Here were displayed material concerning future dental meetings. At one table there were travel and scenic pamphlets of British Columbia. Attractive and nicely worded, well designed invitations to the Annual Convention of the British Columbia Dental Association to be held in May in Vancouver, were presented to interested viewers.

The glamorous social affairs for women guests were well planned and well attended. Breakfast in the Mural room of the St. Francis hotel, luncheon and fashion show at the Sheraton Palace hotel, tour through Nob Hill homes, as well as private coffee parties, cocktail parties, and luncheons gave us an opportunity to meet old friends and new.

One of the joys of any conference is the probability of meeting old friends. It was a thrill to meet one day, Dr. and Mrs. R. J. Godfrey of Toronto. They and their lovely daughter, Gwen, were completing a several weeks' tour of California. Another day at a party at the Palace hotel, seated at the table next to me, was Sybil McIntyre, of Calgary, a friend I hadn't seen for many years.

About sixty Canadians were registered at the convention. Many Canadian and British dentists contributed much to the success of the gigantic meeting and several were elected to prominent positions. Dr. Herbert Parker Buchanan, London, England, secretary of the British Dental Association, was made an honorary member of the ADA. The American Association of Dental Editors elected as vice president Dr. Wesley J. Dunn, of Toronto, editor of the Journal of the CDA. Dr. Roy G. Ellis, Toronto, was appointed consultant to the Council on Dental Education. Dr. Howard J. Merkeley, Winnipeg, a past president of CDA, was one of the essayists on Prosthodontics. Dr. Geo. A. Morgan, Toronto, was elected to the executive council of the American Academy of Oral Roentgenology. The International College of Dentists elected as vice president Dr. Frank Martin, Toronto. Dr. Bob Renton Bell of Christchurch, New Zealand, spoke before the House of Delegates. He and his charming wife, Valerie, were to fly home by way of Hawaii. They expected to attend the Dental Conference in Honolulu and incidentally Valerie said they would keep on

trying to buy a live turtle as requested by their young son.

This dental meeting in San Francisco was the culmination of months of hard work, careful planning, and keen foresight by hundreds of dentists. The host dental societies and their auxiliaries, the ADA, the committee members, and the clinicians, all contributed much to the success of the meeting. Also contributing much was the enthusiastic presence of many members.

The convention was American dentistry at its best, made possible by 96 years of progressive thinking and doing. It was American dentists working together, endeavoring to solve the present and future dental problems of humanity.

The ninety-sixth Dental Convention, held in San Francisco, was truly a many splended thing.

Maude Spence

Preliminary plans have been completed for the 12th International Dental Congress

of the **Federation Dentaire Internationale** to be held in 1957 in Rome. The dates are September 7-14. The Italian Medical Dentists' Association will be host to the meeting, which will be held under the patronage of the president of the Italian Republic, Dr. Giovanni Gronchi.

National Dental Examining Board of Canada

Examination Results — November 1955

All candidates were successful.

Donald George Burns, Montreal, Que., Sam Kobrinsky, Winnipeg, Man., Raymond Ernest Piche, Gravelbourg, Sask., Alexander Stein Black, Saskatoon, Sask., Alfred William Esson Cluett, Lunenburg, N.S., Milton Carl Stroud, Winnipeg, Man., Ronald Lewis McBride, Toronto, Ontario, Earl Patrick Kennedy, Windsor, Ontario, Anthony Thomas Zimbalatti, Windsor, Ontario.

In Memoriam

Herbert Lindsay Field — Dr. Herbert Lindsay Field of Hamilton passed away on November 30, 1955. He was 62.

Born in Teeswater, Ontario, Dr. Field had been a resident of Hamilton since 1918. He attended school in Hamilton and in 1917 received his degree from the Royal College of Dental Surgeons of Ontario. He was president of the Hamilton Dental Association in 1928 and a member of the executive for several years. He was a member of the Board of Governors of the Royal College of Dental Surgeons for eight years, and he was vice-president of the Board of Governors when he became ill at the Ontario Dental Convention in 1948.

During his eight years of office, he served as a member of the Selective Dental Service Board, and Ontario Compensation Board, and the Dentists' Legal Protective Association. He was a charter member of the Burlington Golf Club and the Hamilton Badminton Club.

He was a director of the board of the Medical Arts Building from its inception and was a former rector's warden at the Church of St. Thomas.

Dr. Field leaves one son, Don, of Hamilton, and a brother, Arthur, of Ottawa. His wife, the former Hazel Brown, predeceased him several years ago.

Wilsey Hatfield White — Dr. Wilsey Hatfield White, one of the oldest members of the medical and dental professions, passed away at his home in Sussex, N.B., on November 3, 1955. He was 95 years of age.

Dr. White was born in Springfield, Kings County in 1860. In his youth he was a telegraph operator in Sussex. He later entered Mount Allison Academy, and subsequently graduated in the 1880's in medicine at Philadelphia and in dentistry at Chicago. He practised both professions all during his professional life, first at Dartmouth, N.S., and then at St. Stephen. He went to Sussex in 1891 and practised there nearly 50 years, retiring gradually only after he had entered his 80's.

For a time Dr. White served as coroner of Kings County and during the First World War was an army medical officer at Sussex. In later years Dr. White became prominent in real estate in Sussex, constructing and owning many business and residential premises. A member of the former Methodist, and later the United Church, he was a member of their choirs. He also held membership in the Odd Fellows.

Dr. White's wife was the former Margaret Gillespie of Pennfield, N.S., whose death occurred in 1931. Dr. White was also predeceased by his two sons, Frank and Harold in 1954. He leaves his two daughters, Mrs. H. A. Gibson of Calgary and Katherine L. White of Sussex.

James Edward Black—Dr. James E. Black of Vancouver died on November 29 at the age of 75 after being in ill-health for several months. He suffered a heart attack in May but recovered and had returned briefly to practice when the end came.

Born in Eramosa, Wellington County, Ontario, he graduated from the R.C.D.S. in 1904 and practised in Toronto for seven years before coming to British Columbia where he carried on a busy practice in downtown Vancouver for 44 years.

Dr. Black led an active life. He was the first President of the B.C. Dental Association in the year 1916, and was a member of the Dental Examining Board of the B.C. College for several years. He also served as a Vancouver school trustee in the early days of his career. He was one of the first dentists who voluntarily served in the outpatient department of the Vancouver General Hospital and in the Children's Hospital.

Prominent in the work of the United Church, he was for many years an Elder at St. Andrew's-Wesley Church where he was also active in the A.O.T.S. He was a thirty-second degree Mason, a member of the Acacia Lodge No. 22 A.F. & A.M., and a charter member of Vancouver Kiwanis.

Surviving are his three sons, Albert and Donald of Vancouver and Norman of Toronto; a daughter, Mrs. Marianne Miller of Fairborn, Ohio; one sister and eight grandchildren.

Dr. Black will be remembered for his fine personality. He was a born mixer. The writer recalls his kindly interest in recent graduates who attended meetings and conventions. His hearty handshake and friendly welcome seemed to be just a part of Jimmy Black. We shall all miss him.

John W. Bradley—Dr. John W. Bradley of Virden, Manitoba, passed away on November 5, 1955. He was 66.

Born in Virden in 1889, Dr. Bradley spent most of his life there as a dentist, with a short period overseas in the Canadian Army dental corps in World War I. He moved to Swan River in 1948.

Always active in community affairs, Dr. Bradley served on the school board for 12 years, and on the executive as president of the local branch of the Canadian Legion. He also served on the executive of the Chamber of Commerce. He was a member of the United Church.

Dr. Bradley was predeceased by his wife in September, 1946. He is survived by his daughter, Ellen, (Mrs. W. L. Perkin) of Brandon, and two sons, Dr. Donald Bradley of Reston and Gordon Bradley of Minnedosa.

Donat Roy—Dr. Donat Roy, dental surgeon of Quebec, passed away at his residence on November 19, 1955. He was 58.

He was born at St. Vallier, county of Bellechasse. He received his Doctorate of Dental Surgery at the University of Montreal in 1923.

Immediately after his graduation he began his dental practice in Quebec where he continued his work until just a few months before his death. Dr. Roy served in the Air Force during the First World War.

During the course of his life he was President of the Société de Stomatologie de Québec, Governor of the College of Dental Surgeons of the Province, President and Founder of the Library of Sillery and a member of the executive in charge of the playgrounds and parks.

He was a member of the Knights of Columbus, 4th degree, the University Club, the Kinsmen Club, the Kiwanis Club, the Jacques-Cartier Curling Club, and the St. Joseph Lake Swimming Club.

William Barratt Clayton—Dr. W. B. Clayton, formerly of Duncan, B.C., died in Auckland, New Zealand, on December 1, aged 82.

Born in Dearborn, Michigan, he spent his early youth in Victoria and after graduating in 1901 from the Detroit Dental College, he practised dentistry in the B.C. towns of Nelson, Prince Rupert and Duncan.

He was the Director of the Canadian Army Dental Corps in the First World War, serving both in Canada and overseas. He moved to New Zealand on his retirement.

Col. Clayton leaves his wife, three sons, John of Vancouver, William of Alberni, Pitt of Nanose; and one daughter, Clemency, of Vancouver.

Thomas Oswald Wynne-Jones — Dr. Thomas Oswald Wynne-Jones of Toronto passed away as the result of an accident on November 15, 1955. He was 61.

Born in Wales, U.K., Dr. Wynne-Jones came to Canada, receiving his early matriculation in Toronto and graduating from the Royal College of Dental Surgeons in 1923. During the First World War Dr. Wynne-Jones served in England, Egypt and Salonica, Greece with the Canadian Army Medical Corps and the Canadian Army Dental Corps and during this time he received the Serbian Household Medal.

Dr. Wynne-Jones was a member of St. George's United Church and also of the Toronto Optimist Club, Sunnyside Lodge A.F. & A.M., and the Scottish Rite.

Surviving Dr. Wynne-Jones are his wife, the former Kathleen Conway; two sons, Tom and John and a daughter, Kaye Gwladwen.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1956	Banff, Alberta	June 3rd—6th
1957	Winnipeg, Manitoba	June 23rd—26th

FUTURE EVENTS

Date	Function	Location	Officer	Address
Feb. 5	Academy of Oral Rehabilitation of Handicapped Persons Meeting	Chicago	Dr. Hugh M. Kopel	19933 Livernois, Detroit 21, Mich.
Feb. 17	Faculty of Dentistry At Home	Toronto	Mr. Bob Hall	Faculty of Dentistry, 230 College St. Toronto, Ont.
Mar. 7-8	Tufts University Dental Alumni Assoc. Mid-Winter Meeting	Boston	Tufts University Dental Alumni Association.	Mid-Winter Meeting, 136 Harrison Ave. Boston, 11, Mass.
May 13-16	O.D.A. Convention	Toronto	Mrs. R. Booker	234 St. George St.
May 17-19	B.C. Dental Assoc. Convention	Vancouver	Dr. K. R. McWilliams	217 Medical Dental Bldg., Vancouver, B.C.
June 21-24	American Academy of Dental Medicine Meeting	Detroit	Dr. G. J. Witkin,	45 South Broadway, Yonkers 2, N.Y.
Ju'y 10-13	Amer. Dent. Soc. of Europe	London, Eng.	James P. Molony	110 Harley St., London W. 1.
Sept. 7-14 1957	Congrès de la Fédération Dentaire Internationale	Rome, Italy	G. H. Leatherman	Secretary, London, England.

SHORT GRADUATE COURSES

Tufts School of Dental Medicine announces the following short courses:

Feb. 15-16 Technique for Relining Full Upper & Lower Dentures.	Mar. 19-23 Intravenous Anaesthesia for the Dental Office
Feb. 8-Apr. 4 Orthodontics	Apr. 9-13 Periodontology
Feb. 29-Apr. 18 General Anaesthesia	Apr. 6-May 4 Electrosurgery
Mar. 19-21 Cephalographics & Diagnosis	June 4-8 Full Denture Prosthesis

Address communications to: Dr. Irving Glickman, Director, Division of Post-Graduate Studies, 136 Harrison Ave., Boston, Mass.

Northwestern University announces fifteen short postgraduate courses during the 1955-56 academic year. For further information write the Director of Dental Postgraduate Study, Northwestern University Dental School, 311 East Chicago Avenue, Chicago 11, Illinois.

New York University announces a five day course in Occlusal Equilibration from June 11-15, 1956. For further information contact: Secretary, Postgraduate Division, New York University College of Dentistry, 209 East 23rd Street, New York 10, N.Y.

University of Toronto, Faculty of Dentistry announces the following short courses:

Mar. 1	Courses leading to Specialist Certification.	Mar. 26-28	Orthodontics (For the Specialist)
Mar. 5-9	Endodontics	Apr. 23-27	Periodontics
Mar. 19-23	Orthodontics (For the General Practitioner)	Apr. 30-May 4	Dental Oral Surgery and Anaesthesia

Address communications to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College St., Toronto 2-B, Ontario.

Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

Gingivite de grossesse

par L. I. FEINCHNEIDER, C.D., Montréal

Faits historiques

Les effets de la grossesse sur les tissus gingivaux étaient connus bien avant la connaissance des variations et inter-relation endocriniennes.⁽¹¹⁾ Oakley Coles (en 1874) décrivait les troubles des gencives pendant la grossesse sous le nom de gingivite de grossesse. Toutefois, Coles croyait que cette gingivite était une pure coïncidence avec la grossesse. En 1877, les docteurs A. et D. Pinard⁽³⁴⁾ affirmaient que la gingivite était induite par la grossesse sans pouvoir donner l'explication de ce phénomène. Le traitement employé était une solution d'iode, glycérol, tannin et chlorate de potassium qui donnait des résultats favorables.

À la fin du 18^{ème} siècle, ces troubles étaient acceptés et décrits dans la 5^{ème} édition de la Chirurgie buccale par Garretson⁽⁵⁵⁾. Un cas intéressant décrit par Zentler,⁽⁵⁶⁾ en 1899, faisait remarquer une hypertrophie des gencives persistante jusqu'à la fin de la grossesse. En 1913, Talbot⁽⁴⁸⁾ remarquait une gingivite interstitielle plus ou moins prononcée, toujours présente chez la femme en grossesse. Il supposait que cet état était dû à une

autointoxication par les résidus toxiques de la mère et du fœtus.

En 1926, Monash rapporte 6 cas de gingivites de grossesse généralisées; le traitement suggéré consistait en une prophylaxie, traitement des caries et massage des gencives avec usage de la brosse à dents; en plus, l'excision de toute poussée gingivale après la parturition, si elle persistait⁽²⁹⁾.

En 1930, Merritt remarquait une hypertrophie gingivale augmentée pendant la grossesse qui disparaissait après l'accouchement⁽⁵⁷⁾.

En 1931, Blum étudiait 60 cas de tumeurs de grossesse et suggérait l'ablation de ces tumeurs qui étaient la conséquence de troubles vasomoteurs dans le tissu endothélial des vaisseaux, qu'il attribuait aux dérangements endocriniens, sans pouvoir en fournir les preuves⁽⁷⁾. Hirschfeld, en 1932, prétendait que la grossesse par elle-même provoquait sur les gencives une gingivite marginale, de l'hypertrophie sur les papilles interdentaires, hypertrophie d'une forme qui pouvait être généralisée ou marquée aux endroits qui contenaient des résidus alimentaires à la suite d'une

occlusion traumatique ou d'un défaut de la fonction masticatoire. Cette hypertrophie pouvait être grandissante jusqu'à la fin de la parturition, cette dernière mettait fin à cet état⁽²²⁾.

L'ouvrage le plus récent, qui démontrait la relation entre les glandes endocrines d'une part et la grossesse d'autre part, était écrit en 1933 lorsque Ziskin, Blackberg et Stout faisaient une étude expérimentale et l'interprétation histopathologique de l'état des gencives pendant la grossesse⁽⁵⁸⁾. Ils trouvaient certaines formes de gingivite de grossesse dans 70% des patients, ce qui confirmait les travaux de Freud, Pinard et Schmidt en 1932. Schour⁽³⁹⁾, en 1934, remarquait 53 à 60% des gingivites chez les femmes enceintes alors qu'il ne constatait que 15 à 18% de gingivites chez celles qui n'attendaient pas d'enfant. En conclusion, Ziskin, Blackberg et Stout attribuaient ces gingivites de grossesse, premièrement, à une hyperplasie de l'épithélium et, deuxièmement, à une perte de la kératine, causée toutes deux probablement par des troubles hormonaux⁽⁵⁸⁾. Ziskin nommait de ce fait, en 1936, la gingivite de grossesse: "gingivite endocrinienne."



FIGURE 1

C.M., âgée de 29 ans, race blanche, multipare (seconde grossesse), 8ème mois. Classe III. (a) montre une forte inflammation de gingivite vasculaire. La couleur et l'apparence sont framboisées.

Les photographies sont tirées de l'article de Ziskin, Blackberg et Stout: "The gingivae during pregnancy," Surg. Gynec. obst. 57:714, 1933.

Méthodes de recherches

Une série de biopsies prises pendant les différents mois de la gestation et à plusieurs femmes manifestant une gingivite au cours de la grossesse permettait une étude microscopique de ces cas: Cette étude mettait en évidence:

1. Dans l'épiderme:
 - a) La présence ou l'absence de la surface kératinisée et des couches granuleuses.
 - b) L'oedème et la dégénérescence des couches épineuses.
 - c) L'hyperplasie des couches germinatives et l'augmentation du nombre de mitoses par section.
2. Dans le chorion:

L'examen des cellules inflammatoires infiltrées montre l'hypérémie, un changement de l'état des vaisseaux sanguins et le contenu des fibres collagènes. Des photographies cliniques y sont jointes.

Sur un tableau en rapport avec les mois de grossesse, on pouvait démontrer une disparition de la couche cornée depuis le 4ème jusqu'au 9ème mois et la réparation de ces tissus au cours du 9ème mois.

3. Une série de biopsies prises sur plusieurs patients manifestant des désordres endocriniens, ainsi que des membranes muqueuses de singe Rhesus, traitées avec des hormones.

Classification

Une classification des gingivites de grossesse basée sur plusieurs centaines de cas examinés et déterminés par un changement progressif, clinique et microscopique sont représentés par:

Classe 1: la plus commune et caractérisée par le saignement des gencives pendant la grossesse.

Classe 2: légère modification dans la papille interdentaire qui devient brillante, change du rose au vieux rose, produit un peu d'oedème et perd son architecture pyramidale (le tranchant de la papille interstitielle). Cet état est souvent imperceptible s'il n'est pas compliqué par des conditions locales (résidus alimentaires, caries, tartre). Le patient retrouve son état normal peu après la fin de la grossesse, sans traitement.

Classe 3: Le liséré gingival libre en est généralement atteint; il prend la couleur

et la forme framboisées. Le tissu fortement enflammé saigne facilement sous une légère provocation. La région antérieure des gencives est celle qui est la plus fréquemment atteinte, bien qu'on puisse la retrouver dans d'autres régions. Cette forme se désigne sous le nom de gencives rouges framboisées. (Fig. 1)

Classe 4: L'hypertrophie généralisée du tissu gingival se dénomme gingivite hypertrophique de la grossesse.

4a) La papille interdentaire se développe notablement et perd ses contours naturels. Sa couleur varie du vieux rose à la couleur cyanosée. En présence d'irritants, les contours peuvent devenir rouge clair. Les papilles peuvent varier en volume et en nombre.

4b) Le gonflement de la papille est dû en partie à l'oedème et à l'hyperplasie de l'épithélium.



FIGURE 2

A.K. âgée de 23 ans, race blanche, primipare, 5ème mois de grossesse, Classe 4b. La flèche montre une prolifération de tissus émergeant du dessous de la surface papillaire pour se situer entre la latérale et canine gauche, centrale et latérale gauche. Une ligne de démarcation distincte entre la gencive normale et le tissu de prolifération. Un stage précoce de cette évolution se remarque sur la papille interdentaire entre les deux incisives centrales.

Parfois un tissu de prolifération se forme. (Fig. 8) En grandissant, la gencive normale est poussée en arrière, une ligne de démarcation blanche en résulte. Dans certains cas, le tissu proliféré qui émerge sous la surface de la papille peut couvrir en partie la couronne de la dent. Ce clapier constitue alors un cul-de-sac favorable à l'accumulation des débris alimen-

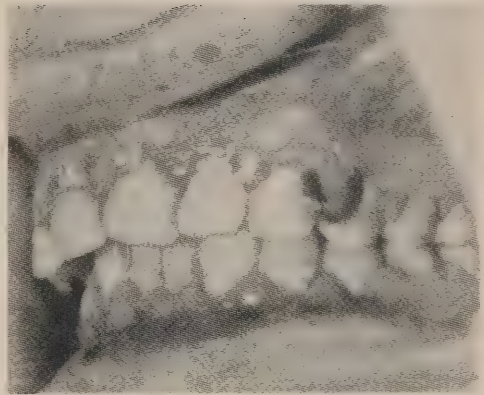


FIGURE 3

J.B., âgée de 26 ans, race blanche, multipare, 5ème mois de grossesse. Classe 4c. Montre un excroissance de la papille entre la canine et prémolaire supérieure gauche donnant une apparence d'un épulis.



FIGURE 4

V.G., multipare, race blanche, 7ème mois de grossesse. Classe 5. Montre ce que l'on appelle une tumeur de grossesse—située entre l'incisive centrale et la latérale.

taires et ces accumulations déterminent une augmentation de cette prolifération. Les facteurs traumatiques, tels que les résidus alimentaires, la présence des calculs, les tissus recouverts par des prothèses, les surfaces aigües des cavités produites par les caries dentaires, le manque de fonction articulaire partielle compliquent le processus pathologique. Dans certains cas, aucun irritant n'est apparent. (Fig. 2)

4c) Dans quelques cas observés, plusieurs papilles interdentaires se sont

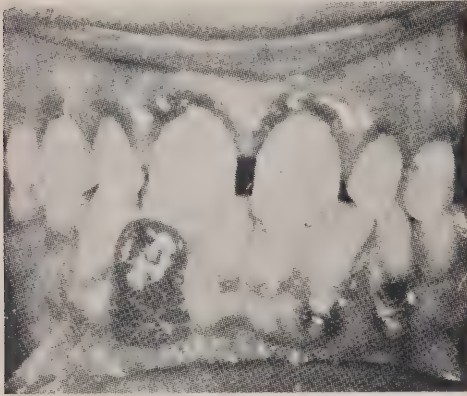


FIGURE 5

E.F., race blanche, multipare, 5ème mois de grossesse. Montre un épulis coexistant à la période de grossesse; c'est une masse molle de forme rectangulaire située entre la latérale et canine inférieure droite d'une longueur d'environ 1.5 cm. (en diamètre vertical) et .75 cm. (en diamètre horizontal). Sa couleur était rouge clair framboisé. La surface de l'épulis donnait une apparence lisse, tandis que les 2/3 de sa partie inférieure avait un aspect réticulé. La tumeur était mobile et détachée de la gencive à l'exception du centre où elle restait attachée à la gencive marginale par un pédicule. Elle était indolore; la lésion saignait facilement, s'il y avait traumatisme. Sa première apparition à ce lieu s'était établie deux ans avant la grossesse et poussait graduellement, sans atteindre la taille actuelle. Son ablation était faite et diagnostiquée comme épulis ou tumeur fibroïde. A la suite de l'excision, aucune trace de réapparition ne se faisait voir pendant environ six mois. Après cette période, une nouvelle apparition s'est faite. Une deuxième ablation a été faite, il y a environ un an. A la suite de cette 2ème intervention, dix mois se sont passés sans récurrence. Ce n'est que depuis un mois que l'épulis réapparaissait et dans une proportion bien plus grande qu'elle n'était auparavant.

La patiente était au 5ème mois de sa 3ème portée; les grossesses précédentes étaient espacées de 9 et 5 ans, sans lésion similaire.

développées dans une proportion telle qu'elles apparaissent comme des épulis. La papille individuelle s'étend latéralement, l'attachement interstitiel rétrécit et donne l'apparence d'une tumeur pédiculée. Même dans cet état déformé, la tumeur doit être classée comme gingivite hypertrophique et non à l'épulis. (Fig. 3)

4d) Dans d'autres cas, la prolifération commence sous le bord libre de la gencive marginale et s'étend le long de la crevasse gingivale couvrant la dent de quel-

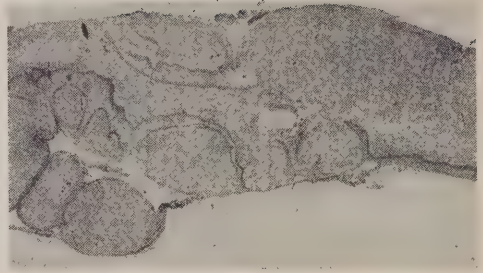


FIGURE 6

Même cas que figure 5. Photomicrographie montrant la poussée sur la surface de la membrane muqueuse.

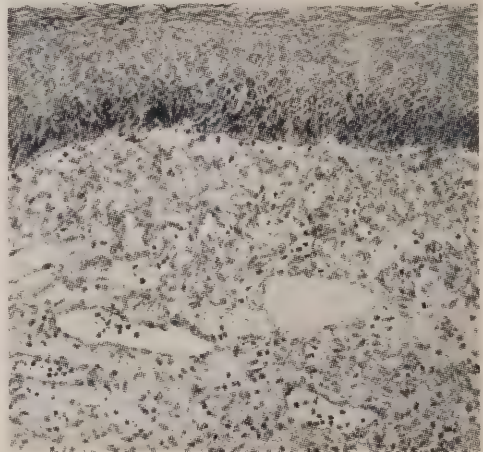


FIGURE 7

Agrandissement de la figure 6, montrant la région de la membrane muqueuse à laquelle la tumeur était attachée; les changements étaient caractéristiques de la gingivite de grossesse.

ques millimètres sans incorporer la papille interdentaire.

4e) Un autre type moins fréquent de la même catégorie est la formation d'une pseudo-papille. Dans ce cas, la papille interdentaire n'est pas élargie et peut avoir la même couleur que le reste de la gencive; toutefois, une ligne horizontale de séparation forme une crevasse visible à la base de la papille. Celle-ci peut s'enlever par un procédé simple, en posant une lame dans cette ligne horizontale. Dans tous les cas de gingivites hypertrophiques de grossesse, les gencives saignent facilement à la moindre provocation, mais sont rarement ou jamais douloureuses.



FIGURE 8

L.G., âgée de 20 ans, race blanche, 7ème mois de grossesse, montre en (A) l'emplacement de la prolifération d'une pseudo-papille. Cette formation à la crevace gingivale, pousse la gencive normale en arrière.

Classe 5: tumeur de grossesse. Pour la plupart des cas, une excroissance limitée apparaît à un endroit quelconque de la bouche. Elle apparaît au début sous forme d'une papille exagérée. Après avoir atteint une grandeur considérable, elle ressemble à un épulis d'un diamètre d'environ 1 à 2 cm. Généralement, elle a un attachement pédiculé de couleur cyanosée avec bordure rouge claire. Souvent le dérangement de la mastication et le traumatisme auxquels la tumeur est sujette, produit une surface nécrotique grise sur une partie de cette excroissance. Dans un cas étudié, l'entière excroissance était de couleur rouge sang. Ici encore, des irritants gingivaux peuvent être présents. La tumeur peut apparaître tôt au cours de la grossesse et généralement pousse rapidement et aisément. Elle diffère d'un

épulis ordinaire par le fait qu'elle peut disparaître ou réduire de taille après la parturition. Toutefois, pendant que la tumeur de grossesse est diagnostiquée comme telle à l'état de grossesse, un épulis vrai peut coexister, grandir et diminuer avec la parturition. L'épulis a d'autres caractères distinctifs et n'est pas à confondre avec les causes de grossesse. (Fig. 4 et 5) et (Fig. 6 et 7)

Discussion sur les relations endocriniennes

Les travaux cliniques démontrent que le lobe antérieur de la glande pituitaire a une influence et contrôle les autres glandes à sécrétion interne, notamment l'hypophyse⁽⁵⁰⁾. L'activité de l'hypophyse est démontrée par les variations frappantes qui résultent d'une déficience fonctionnelle de cette glande chez l'homme. Dans la maladie de Simmond, après l'hypophysectomie, il se produit une involution de la glande thyroïde, du cortex adrénalien, des gonades et des organes sexuels accessoires. La capacité pour le travail musculaire diminue, la résistance à l'infection et au traumatisme diminue. L'hormone de la thyroïde a une action dépressive sur la fonction thyrotropique de l'hypophyse, puisque, dans l'hyperthyroïdisme, des quantités inférieures à la normale de substances thyrotropiques sont trouvées dans l'urine⁽⁶⁰⁾.

D'autre part, l'hypophysectomie ou la maladie de Simmond cause l'involution de la thyroïde; le myxoédème peut devenir le facteur dominant^(61, 27).

La thyroïdectomie provoque l'hypophyse dans une diminution d'acidophiles et une augmentation apparente dans les chromophobes, probablement à cause de la dégranulation des acidophiles qui est une indication de leur activité décroissante. Ces changements peuvent être évités par une thérapie à la thyroxine⁽²⁶⁾.

Il y a aussi une relation réciproque entre le cortex et l'hypophyse. L'hypophysectomie cause une diminution adrénalienne⁽⁶¹⁾. D'autre part, l'adénome acidophile produit un excès des facteurs adrénotropes, puisque l'hypertrophie a-

adrénalienne normalement apparaît dans l'acromégalie⁽¹⁸⁾.

L'adrénalectomie cause une décroissance dans le nombre de cellules basophiles de l'hypophyse⁽⁶²⁾, quoique la suractivité de la glande adrénalienne produit également une dégénérescence basophile de l'hypophyse. Par suite de la suractivité des basophiles, on a un effet spécifique de sécrétion anormale du cortex⁽¹⁸⁾. Les facteurs hypophysaires sont nécessaires pour maintenir les gonades et, par elles, les organes sexuels accessoires. L'hypophysectomie cause une atrophie des gonades et vice versa; les glandes atrophiées des rats hypophysectomisés peuvent être régénérées par des injections de substances gonadotropiques⁽⁶³⁾. On accepte généralement deux principes gonadotropiques qui sont élaborés par l'hypophyse, les facteurs F.S.H. et L.H.⁽¹⁹⁾.

Smith⁽⁵⁰⁾ prétend que la détermination des nombres de facteurs gonadotropiques n'a pas encore été définie. Pendant la grossesse, il y a une augmentation de poids et des dimensions de l'hypophyse. Cytologiquement, il y a une sécrétion active marquée par la granulation, l'appareil de Golgi hypertrophié et une mitochondrie abondante⁽⁶⁷⁾. L'interprétation des changements cytologiques observés pendant la grossesse sont en conflit⁽⁴³⁾. Toutefois, Severinghaus⁽⁴³⁾ prétend que, pendant la grossesse, les basophiles et acidophiles sécrètent activement; c'est pourquoi, la dénomination des cellules de grossesse n'est pas un type de cellules distinctes, mais plutôt une certaine phase active des acidophiles ou basophiles du cycle sécrétoire. Malgré que l'hypophyse est considéré dans un état hypéreactif pendant la grossesse, on a démontré qu'entre le 2ème mois de grossesse et la semaine qui suit la parturition, la glande à très peu ou pas du tout de potentialité gonadotropique^(38, 64).

L'activité cellulaire augmentée en relation avec la diminution de la potentialité gonadotropique du tissu glandulaire lui-même indique une libération rapide des produits de sécrétion. Par suite d'une hypophysectomie chez les singes Rhesus femelles, il y a d'importants changements

gingivaux et des membranes muqueuses buccales. Dans la plupart des cas, la couche kératinisée est absente, les cellules du sommet dégènèrent et les fibrilles intercellulaires sont pauvrement préservées⁽⁶⁵⁾.

La thyroïde

La thyroïde est associée avec la fonction pituitaire⁽¹²⁾. La thyroïde a des effets multiples sur divers organes et fonctions. Agissant sur la croissance, la maturité, la différenciation des tissus, la distribution des liquides, des sels, des colloïdes de l'organisme, le métabolisme des hydrocarbures, le système nerveux, musculaire et circulatoire. La glande thyroïde stimule le cortex adrénalien par l'intermédiaire de la pituitaire.

PREUVE: Une administration de thyroxine après une hypophysectomie ne stimule pas le cortex adrénalien⁽⁴⁷⁾.

L'hypertrophie corticale réalisée par l'injection de la thyroxine démontre la nécessité d'une production hormonale élevée pour compenser les effets de cette thyroxine⁽¹⁸⁾.

Malgré que les rapports cliniques présentent une co-relation étroite entre la fonction thyroïde et gonadale, aucune relation hormonale spécifique n'a été prouvée⁽⁶⁶⁾.

Par contre, Tyndale et Levin⁽⁵⁰⁾ ont trouvé que chez les rats hypophysectomisés la thyroxine diminue la réponse ovarienne aux injections d'extrait d'urine de femme castrée.

CONCLUSION: La thyroxine inhibe directement les gonades. Dans tous les cas, l'action de la thyroxine produit une fonction estrogénique faible⁽²⁶⁾. Durant la grossesse, l'accroissement de la glande thyroïde causé par la transformation du parenchyme augmente la vascularité et l'hyperplasie épithéliale⁽²³⁾. Une augmentation du métabolisme basal est en rapport avec les exigences croissantes du fœtus^(26, 67).

La thyroïdectomie chez le singe Rhesus produit de l'hyperkératose dans les alvéoles et auréoles, de l'œdème intercellulaire épithélial, une mitose augmentée de la couche de cellules basales,

un dépôt de matériel colorant et glycogène sur la muqueuse. Les crétins et myxoédémateux traités inadéquatement présentent les mêmes changements histologiques ⁽⁶⁸⁾.

Glandes adrénaliennes

Parmi les activités physiologiques connues influencées par le cortex adrénalien, nous avons—le métabolisme hydrocarboné, la capacité des muscles pour répondre aux stimulations, la distribution des électrolytes, et la résistance au Stress.

L'inter-relation entre le cortex adrénalien et les autres glandes endocrines est réciproque, souvent indirecte avec l'hypophyse agissant comme médiateur ⁽¹⁸⁾.

Les gonades sont intimement associées avec le cortex adrénalien; l'oestrone, le progestérone et une variété d'androgènes ont été trouvés dans les extraits de glandes adrénaliennes normales. Les changements fonctionnels ou organiques dans le cortex adrénalien qui produisent des changements anormaux dans la sphère sexuelle sont attribués aux syndromes adrénogénitaux. Toutefois, puisque des changements varient avec le type de l'hormone produite, l'âge et le sexe du patient, plusieurs syndromes peuvent se distinguer ⁽¹⁸⁾.

Pendant la grossesse, les glandes adrénaliennes sont agrandies, mais l'hyperplasie est fonctionnelle et disparaît après la parturition. Le changement est physiologique et son mécanisme incertain. Dans la maladie d'Addison, il y a épaississement de la surface kératinisée sur l'alvéole gingivale, parakératose, hyperplasie de la couche cellulaire basale et surcroît des tissus conjonctifs. Dans l'hyperplasie adrénalienne, il y a réduction de la surface kératinisée, pichnose et dégénération hydropique dans la couche épineuse et hyperplasie de la couche cellulaire basale.

Ovaires

A l'époque de la puberté, les ovaires produisent 2 hormones principales, l'estrogène et le progestérone. L'estrogène sécrétée par le tissu folliculaire est essentielle pour la croissance et le développement des organes sexuels accessoires chez

la femelle. Le progestérone sécrété par le corps lutéinique varie en relation avec la sécrétion d'estrogène; il agit parfois synergiquement et parfois en antagoniste ⁽¹⁾.

Physiologiquement, l'estrogène en circulation est détruit par oxydation au niveau du foie ^(80, 84).

La grossesse en soi n'altère pas le métabolisme hépatique des estrogènes "in vitro" Preuve: une section du foie de rat en gestation métabolise les estrogènes au même degré qu'une section de foie de rat à l'état normal ⁽²¹⁾.

Normalement, une très petite quantité d'estrogène et progestérone sont trouvés dans l'urine. Pendant la grossesse, il y a une augmentation marquée de l'estrogène et progestérone dans le sang et dans l'excrétion urinaire. La quantité d'estrogène dans l'urine de grossesse croît graduellement jusqu'à la parturition, puis diminue remarquablement dans l'intervalle de quelques jours. Il y a trois formes d'estrogènes, dans l'ordre descendant d'activité physiologique, ce sont: l'estradiol, l'oestrone et l'estriol.

Durant les 8 premiers mois de la grossesse, 99% des estrogènes sont excrétés conjointement avec l'acide glucuronique sous forme de glucuronide qui est une forme détoxifiante inactive, mais peu avant la parturition, les quantités d'estrogènes actifs augmentent notablement ⁽⁷⁰⁾.

En plus, les estrogènes du sérum de grossesse paraissent être intimement liés à la fraction protéine indiquée par les faits suivants:

- 1—Elles ne passent pas à travers une membrane de colloïde.
- 2—Elles sont précipitées dans les fractions de protéines.
- 3—Une hydrolyse prolongée est nécessaire pour libérer les estrogènes de la fraction protéine.

La quantité d'hormones combinées aux protéines varie entre 23 et 50% du nombre total d'estrogènes ^(82, 88).

La preuve que les estrogènes augmentent pendant la grossesse est qu'ils sont pour la plupart sous forme inactive. Malgré cela, la sécrétion totale des estro-

gènes est telle que les quantités saisissables d'estrogènes libres sont toujours disponibles pour les besoins de l'organisme. Le progestérone n'augmente pas dans l'urine pendant les premiers soixantes jours de la gestation, mais ensuite l'augmentation commence et atteint le sommet au 8ème mois⁽⁷¹⁾.

La conversion d'estrone en estriol est facilitée par l'action du progestérone qui agit également pour prévenir le catabolisme de l'estrogène. Le déséquilibre des estrogènes peut se produire pendant la grossesse par manque de progestérone⁽⁴⁵⁾.

La castration du singe Rhesus cause une altération de l'arrangement de la couche cellulaire du sommet au niveau alvéolaire et aréolaire gingivale, ainsi qu'une dégénérescence tissulaire⁽⁶⁵⁾.

L'injection de l'hormone estrogène néanmoins a un effet favorable sur la muqueuse gingivale et la membrane buccale.

Placenta

Cet organe est d'une importance indiscutable pendant la grossesse, malgré que la preuve de sa relation spécifique est encore obscure jusqu'à présent. Le placenta est une source d'estrogènes extra-ovariennes trouvées en période de grossesse. La grande importance des estrogènes urinaires qui retournent rapidement à la normale après la parturition, la présence continue des estrogènes en grossesse et la haute concentration d'estrogènes trouvées dans le placenta sont à remarquer.

Allen, Pratt et Doisy⁽²⁾ indiquent que le placenta est une source d'estrogènes. Le placenta a probablement une influence sur la production du progestérone. Car le progestérone est trouvé dans la grossesse après l'ablation ovarienne. Le placenta, qui a une activité lutéinique, suggère qu'il est une source extra-ovarienne d'hormones⁽⁷²⁾.

Une autre substance d'une fonction métabolique encore inconnue présente dans l'urine pendant la grossesse est l'hormone, "Gonadotropine choriale". Celle-ci a une action sur les ovaires des rongeurs (rongeurs sur lesquels on fait

les tests de grossesse). Mais cette action diffère du principe gonadotrope de l'hypophyse⁽¹⁴⁾.

La sécrétion de la gonadotropine choriale paraît être clairement reliée au placenta, puisque l'hormone est trouvée dans l'urine mâle qui a un chorio-épithéliome absolument associé au tissu chorial⁽⁵²⁾.

Il a été prouvé par Brown et Venning⁽⁹⁾ et Evans, Rohls et Wonder⁽¹⁶⁾ que l'excrétion de la gonadotropine choriale augmente spectaculairement, qu'il atteint le sommet pendant le 20ème et 50ème jour de la grossesse. Après cette époque, la gonadotropine choriale décline rapidement à un niveau infirme qui se maintient jusqu'à quelques jours après la parturition. L'effet de l'administration de la gonadotropine choriale chez les femmes diffère remarquablement du principe gonadotrope du lobe antérieur de l'hypophyse. Geist,⁽⁷³⁾ en 1933, a rapporté que l'administration de la gonadotropine choriale produit des dommages folliculaires et pas de stimulation, plutôt un arrêt de développement folliculaire. Hambleton⁽²⁰⁾ rapporte que la gonadotropine choriale ne produit pas de stimulation de la follicule primaire, augmente la dégénérescence et changements kystiques dans la follicule mure. L'administration de la gonadotropine choriale produit des changements macroscopiques et microscopiques dans la gencive et dans les membranes de la muqueuse buccale des patients, femmes et singes. Il y a oedème, inflammation, saignements puis apparence d'angine de Vincent. Microscopiquement, il y a réduction de la kératine de surface, détérioration de la couche cellulaire épineuse et inflammation sub-épithéliale⁽⁷⁴⁾.

Vitamines

La corrélation entre les hormones et les vitamines a de l'importance, puisque une diète inadéquate peut produire un déséquilibre endocrinien. Les effets de l'avitaminose ont été discutés; il reste toutefois à discuter la relation qui existe entre les vitamines et le système endocrinien.

Vitamine A

L'avitaminose A cause une métaplasie de caractère bénin, une kératinisation et perte des fonctions sécrétoires des tissus épithéliaux de l'organisme. Les vitamines agissent probablement comme catalyseurs ou régulateurs de certains procédés métaboliques qui sont essentiels à l'intégrité fonctionnelle structurale des cellules épithéliales. La source de la vitamine A, dans l'organisme qui apparaît être un pigment, est le carotène; celui-ci converti en vitamine A par une action enzymatique est mis en réserve dans le foie.

Wohl et Feldman (1939) ont démontré que l'hormone thyroïdienne est nécessaire à la transformation du carotène et à la mise en réserve des vitamines A dans le foie. Certaines recherches ont démontré un antagonisme entre la vitamine A et la thyroxine, mais on n'a pas pu conclure l'évidence.

Ziskin, Rosenstein et Drucker⁽⁷⁵⁾ ont découvert que la vitamine A améliore la kératinisation et l'hyperplasie produite par des injections d'estrogènes, ce qui indique une relation contraire entre la vit. A et les estrogènes. Ils prétendent que l'estrogène peut même provoquer la kératinisation et l'hyperplasie dans les structures épithéliales ressemblant de beaucoup à l'avitaminose A. Pendant le 3ème trimestre de la grossesse, le plasma présente une déficience de la vit. A. La réserve du foie foetal et l'utilisation dans les tissus foetaux sont considérées comme la cause de cette avitaminose partielle chez la femme en grossesse. (Bodansky, Lewis et Lillienfeld, 1943). Ceci peut, ou ne peut pas, être la cause de la kératinisation augmentée au niveau des gencives pendant le dernier mois de la grossesse.

Vitamine B

La déficience des composés de vit. B complexe cause différentes maladies. Les plus importantes sont: le bériberi (déficience de thiamine), la chéilose (déficience de riboflavine) et la pelagre (déficience de niacine). L'expérience indique une relation antagoniste entre la vit. B complexe et la glande thyroïdienne.

La vit. B améliore la perte de poids

provoquée par l'hyperthyroïde⁽⁷⁶⁾. Les reins et le foie des animaux hyperthyroïdiens sont déficients en vit. B⁽¹³⁾. Le fonctionnement anormal du foie peut être produit par la sécrétion thyroïdienne si la diète est impropre⁽⁷⁷⁾.

Il a été établi depuis quelques années que la relation existe entre les vit. B complexes et les estrogènes. Sutton et Ashworth⁽⁴⁶⁾ ont observé que l'amélioration de la glossite aigüe et les lésions de la pelagre sont obtenues par l'administration d'un extrait du lobe antérieur de la pituitaire. Dans les cas d'insuffisance d'acide nicotinique, de riboflavine, de foie parenthéral et de diète inadéquate, il semble y avoir une relation entre la vit. B complexe et le lobe antérieur de l'hypophyse. Les mêmes auteurs en 1942 ont démontré que l'administration de l'estrogène aux personnes souffrant de déficience en vit. B complexe peut provoquer une apparence caractéristique des lésions dues à la déficience de la thiamine, de la niacine et de la riboflavine. Ils prétendent alors que le lobe antérieur de la pituitaire sécrète une hormone facilitant l'utilisation de la vit. B complexe et que l'estrogène supprime sa sécrétion. Singher et al et Segaloff⁽⁴¹⁾ ont démontré que la déficience des vit. B complexes, en particulier la thiamine et la riboflavine, diminue la potentialité du foie de rat, rendant les estrogènes inactifs, in vivo et in vitro.

Biskind et Shelesnyak⁽⁶⁾ ont démontré que le foie a une fonction importante dans le maintien des estrogènes dans l'organisme à un niveau normal et que la vitamine B affecte le fonctionnement du foie causant ainsi un excès d'estrogènes dans l'organisme. Ils ont prouvé que les patients atteints d'avitaminose B peuvent être lésés par un excès d'estrogènes libres, tel que la ménorrhagie ou métrorrhagie, mastite kystique et de tension prémenstruelle. Ces états sont améliorés par l'administration de doses adéquates de vit. B complexe. Pendant la grossesse, un besoin supplémentaire de thiamine est nécessaire. L'insuffisance de celle-ci peut mettre en évidence une névrite⁽⁷⁸⁾.

Pendant la grossesse, si la thiamine n'augmente pas, son insuffisance aurait

tendance à produire une déficience de l'estrogène; cependant, l'effet sur la gencive dépendrait du rapport proportionnel avec le contenu de vitamine C de la diète. Lorsque la diète est constante, la quantité de vit. C du plasma maternel diminue graduellement au cours de la grossesse; lorsque la quantité de vit. C de la diète diminue, l'acide ascorbique augmente respectivement dans le sérum⁽⁷⁹⁾.

L'étiologie de la gingivite de grossesse

Les changements les plus marqués dans la gingivite de grossesse et des membranes de la muqueuse buccale sont: absence de la surface kératinisée, altération hydropique de la couche spinale,

une grande hypertrophie et hyperplasie de l'épithélium vaginal au cours de la grossesse, mais que les cellules normales qui ne sont pas nucléées ni cornifiées deviennent moins nombreuses au cours de la grossesse, pour disparaître presque totalement à la fin de la portée. La muqueuse nasale est une autre surface épithéliale qui démontre des changements particuliers pendant la grossesse.

Mortimer, Wright et Collip⁽⁸⁰⁾ ont démontré qu'au cours de la gestation la couleur de la muqueuse nasale devient de plus en plus rouge; le 3ème mois est la limite de la normale; du 5ème au 7ème mois, la couleur dépasse la normale, et pendant le 8ème mois, la muqueuse est très rouge et gonflée. Les changements dans la bouche pendant la grossesse ne sont pas spécifiques aux membranes des muqueuses buccales; elles apparaissent également sur les surfaces épithéliales dans d'autres endroits de l'organisme. La diminution de la kératine peut être causée par un métabolisme systématique altéré



FIGURE 9

B.H., âgée de 41 ans, traitée avec du diéthylstilbestrol, pendant 2 ans pour désordres gynécologiques. Montre un important épaississement du chorio et réduction de croissance de l'épithélium dans la région gingivale alvéolaire. (Il est à noter que le Stilbestrol a le même effet que l'Estrogène)

hyperplasie de la couche germinative, et changements inflammatoires du chorio.

Papanicolaou⁽⁸³⁾ a démontré qu'il y a



FIGURE 10

V.S. Nègresse âgée de 9 ans—fonction défailante de la glande thyroïdienne. Présente une section de la gencive alvéolaire, le sommet de la papille d'une canine supérieure droite affectée d'une dégénérescence épithéliale. On note la présence du corps hyalin d'une régularité remarquable.

qui est le résultat d'un effet exagéré des estrogènes sur les tissus.

Ziskin et Blackberg⁽⁸⁵⁾ ont démontré

que le manque d'estrogènes amène des changements dégénératifs dans la gencive et membranes muqueuses de la bouche. On a constaté chez une patiente qui souffrait d'hirsutisme et d'aménorrhée, une absence de la kératine. Par contre, l'administration de l'estrogène cause une augmentation de l'inflammation gingivale, une augmentation de l'épaisseur de la kératine. Il y a: 1—un épaissement et une maturité de la surface cornée; 2—une décroissance des fonctions épithéliales; 3—une grande augmentation dans l'épaisseur des tissus conjonctifs, ce qui donne l'hyperplasie. (Fig. 9) La quantité croissante du progestérone de la grossesse⁽⁸⁰⁾ aurait tendance à changer l'effet

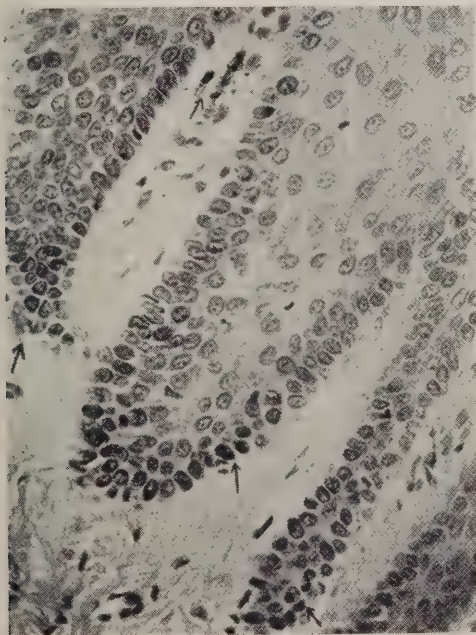


FIGURE 11

J.R. Homme de 29 ans, cas d'Addison. Présente une hyperplasie épithéliale de la gencive alvéolaire. On note des pigments de mélanine dans les cellules basales de l'épithélium ainsi que dans les tissus conjonctifs (voir flèche).

estrogénique, puisque le progestérone a une action étendue sur l'estrogène, produisant ainsi son catabolisme et réduisant son utilisation.

Smith et Smith,⁽⁴⁵⁾ et Hall,⁽⁵¹⁾ ont démontré qu'une diminution de la zone

cornifiée du vagin n'apparaît pas au cours de la grossesse (décrit par Papanicolaou). Il en résulte soit un avortement, soit une fausse couche; cependant, par l'administration de progestérone, la zone cornifiée du vagin sera réduite, tout en changeant l'activité des estrogènes afin d'empêcher une fausse couche.

Ziskin⁽⁵²⁾ a démontré que les injections de gonadotropine chorales causent des changements rétrogrades de l'épithélium des castrés et des non-castrés, changements remarqués chez les castrés en premier lieu. Après 68 jours de traitement par la gonadotropine chorale sur le singe, on remarquait une perte de la surface kératinisée et une hyperplasie cellulaire. Ces changements gingivaux simulaient une angine de Vincent sub-aigüe. Par suite, l'administration de gonadotropine chorale sur patient traité pour dysménorrhée, produit les changements suivants: nécrose de la surface épithéliale et inflammation distincte du chorion. Cette condition a été diagnostiquée cliniquement comme angine de Vincent sub-aigüe. Ces manifestations produites par les injections de gonadotropine chorale sont de même espèce, expérimentalement et cliniquement, comme type présenté dans la gingivite au cours de la grossesse. La grande quantité de gonadotropine chorale trouvée dans l'urine pendant la grossesse, dont la fonction métabolique est inconnue, peut cependant jouer quelque rôle dans le changement et dans l'altération épithéliale.

Il est évident que la glande pituitaire se trouve dans un état hyperactif au cours de la grossesse^(37,43). L'hyperactivité de cette glande peut également être influencée 1—par l'hyperplasie de la couche des cellules basales 2—de l'épithélium qui intervient, malgré la perte de kératine et 3—la dégénération hydropique de la couche épineuse.

On peut aussi considérer la cause de ce changement comme étant due à la gonadotropine chorale, puisque l'hyperplasie épithéliale fut provoquée par expérimentation d'un extrait pur de l'urine de la grossesse.

L'activité de la glande thyroïde aug-

mente aussi au cours de la grossesse⁽²³⁾. La fonction croissante de la glande thyroïde peut causer une diminution de l'utilisation des estrogènes, puisque l'action de la thyroxine est telle qu'elle produit un état qui amène un fonctionnement ralenti des estrogènes. Cependant, *l'hypothyroïdisme* peut être la cause du fonctionnement ralenti des estrogènes (Fig. 10). *L'activité variante du cortex adrénalien*, au cours de la grossesse, peut être un autre facteur qui aurait tendance à modifier les estrogènes libres. Un cas de la maladie d'Addison a démontré une

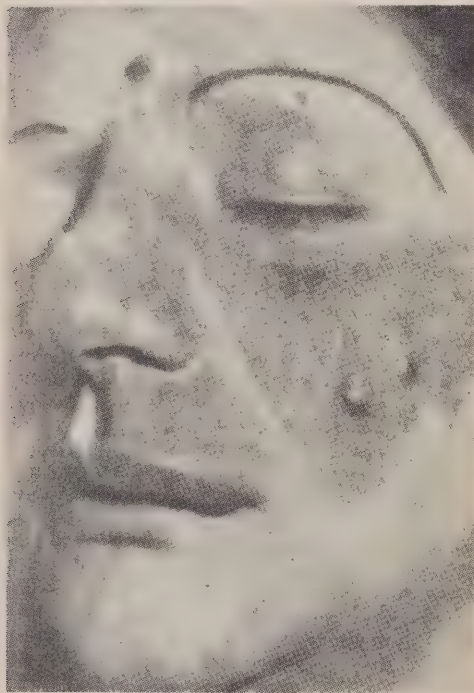


FIGURE 12

M.C., âgée de 27 ans, race blanche, primipare, 7ème mois de grossesse. La région sombre couvrant la majeure partie de la joue gauche est un nevus. Sur cette surface, on remarque plusieurs tumeurs de grossesse qui émergent au 5ème mois de la portée et se concentrent sur le nevus.

épaisseur exagérée de la surface kératinisée, de l'hyperplasie du chorion, couche des cellules basales et une épaisseur exagérée des tissus conjonctifs (Fig. 11). Réciproquement, chez un patient souffrant de l'hyperplasie adrénalienne et du

pseudo-hermaphrodisme, il y a réduction frappante de la surface kératinisée, une dégénération pychnotique et hydropique de la couche épineuse de l'hyperplasie de la couche des cellules basales et de l'in-

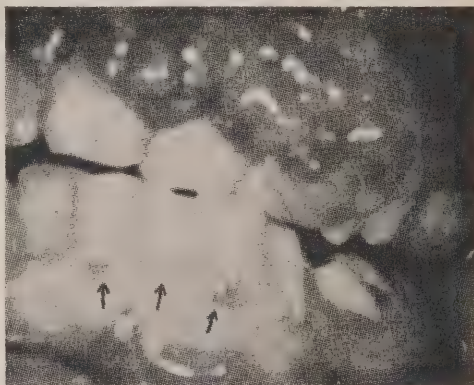


FIGURE 13

Même cas. La gencive et la membrane muqueuse de la mâchoire supérieure gauche sont incluses dans la formation du nevus. On remarque cependant des tissus de prolifération sur la gencive supérieure dus à la grossesse, et une nouvelle poussée sur la région gingivale antéro-inférieure, qui est similaire à la lésion vue sur la face.



FIGURE 14

L.A., âgée de 36 ans, multipare. Présente une tumeur sur le côté de la langue; celle-ci est apparue au 5ème mois de la grossesse et s'est maintenue jusqu'à la fin de la portée sans varier sa taille.

Après la parturition, la tumeur a régressé légèrement, mais n'est pas disparue. L'ablation a été faite et celle-ci était considérée comme tissu conjonctif fibreux vascularisé.

filtration périvasculaire dans le chorion. Ainsi, l'hypéractivité du cortex adrénalien cause des changements gingivaux tels que ceux observés au cours de la grossesse.

Le changement physiologique de la grossesse peut causer des changements du fonctionnement du foie. Au cours de la grossesse, on peut observer la disparition du glycogène de la portion centrale des lobules hépatiques, la capacité de stocker le glycogène est réduite, une congestion passive des veines centrales, une stagnation de la bile dans les conduits biliaires; le fonctionnement anormal du foie peut provoquer de la glycosurie.

Afin de comparer, nous aimerions citer un cas de cirrhose du foie où il y aurait une parakératose sur la joue. Un dépôt de pigments dans les cellules basales, d'où on conclut un changement du fonctionnement hépatique pouvant induire les tissus épithéliaux. A cause des changements gingivaux au cours de la grossesse, il y a abondance des glycogènes et, du fait, présence de glycosurie.

On peut aussi remarquer, au cours de la grossesse, des changements réactionnels des tissus. Pendant la gestation, on peut voir apparaître sur la joue et le front une tumeur croissante couvrant une surface d'un hémangiome (fig. 12 et 13). On a remarqué une augmentation de l'oedème et une vascularisation des tissus gingivaux (fig. 14). Cependant, les croissances sur le visage, la gingivite et l'oedème disparaissent et diminuent respectivement après parturition. On a discuté les relations présentes entre vitamines et le système endocrinien. Le changement de la diète au cours de la grossesse affecte sans doute l'équilibre endocrinien. Les variétés de gingivites et d'affections des membranes muqueuses ne sont pas spécifiques, elles varient d'un individu à l'autre. Dans l'un des cas, on a pu observer une augmentation de la kératine, alors que dans d'autres cas, il y eut une diminution de celle-ci. Les changements ne sont pas les résultats d'un seul facteur étiologique, mais plutôt d'une manifestation due au changement de la nutrition et de l'état métabolique de l'organisme au cours de la grossesse. Le manque d'utilisation des

estrogènes ou encore des modifications des estrogènes endogéniques sont les principales causes des variations de la gencive.

Conclusion du mécanisme

L'augmentation en sérum et estrogènes urinaires n'a pas un effet esthogénique proportionnel sur la gencive, puisqu'une partie de l'estrogène du sérum appartient à la fraction protéine du sang; quant aux estrogènes urinaires, ils sont excrétés sous forme du glucuronide, qui est un produit détoxifiant.

Il peut y avoir une utilisation réduite d'estrogènes sur les tissus buccaux à cause de l'augmentation du progestérone, qui modifie l'utilisation de l'estrogène. L'importante concentration de la gonadotropine chorale trouvée pendant la grossesse affecte, dans un sens, la gencive par un mécanisme encore inconnu. L'augmentation de l'activité de la glande thyroïde et du cortex adrénalien peut également réduire l'effet de l'estrogène sur la gencive.

Certains facteurs nutritifs peuvent altérer quantitativement les estrogènes endogéniques nécessaires aux gencives. Le résultat final est le manque d'utilisation des estrogènes qui se manifeste sur la gencive et muqueuses buccales sous forme de gingivite de grossesse.

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BUREAU NATIONAL D'EXAMEN DENTAIRE CEDULE DES EXAMENS, 1956

La durée de chaque examen écrit sera de 2½ heures

	Lundi, le 4 juin	<i>Pour l'ouest de Brandon</i>	<i>Pour l'est de Brandon</i>
Dentisterie opératoire		9.00 h. a.m.	10.00 h. a.m.
Chirurgie buccale, anesthésie, pathologie		1.30 h. p.m.	2.30 h. p.m.
	Mardi, le 5 juin		
Prothèse		9.00 h. a.m.	10.00 h. a.m.
Etiquette, jurisprudence, déontologie		1.30 h. p.m.	2.30 h. p.m.
	Mercredi, le 6 juin		
Dentisterie préventive		9.00 h. a.m.	10.00 h. a.m.
Medecine buccale		1.30 h. p.m.	2.30 h. p.m.
	Jeudi, le 7 juin		

Deux demi-heures d'examens avec une demi-heure d'intervalle.

Un examen oral (application des sciences fondamentales à l'art dentaire clinique)

Les candidats acceptés aux examens seront avertis personnellement de l'endroit où ils devront se rendre pour les examens.

Le Bureau national d'Examen dentaire octroie des certificats aux candidats, qui ont obtenu un nombre suffisant de points à ses épreuves; il faut toutefois que le bureau provincial d'une ou de plusieurs provinces ait au préalable reconnu officiellement leur compétence. Ces certificats permettent d'obtenir une licence pour exercer dans une province en particulier.

Pour être admis à l'examen annuel, il faut remplir une formule officielle et la faire parvenir au secrétaire du Bureau national d'Examen dentaire au plus tard le 15 avril. On peut se procurer ces formules en s'adressant au secrétaire. Il faut adresser toute la correspondance destinée au B.N.E.D. au:

**Docteur H. N. Beach, secrétaire,
Bureau national d'Examen dentaire,
150, rue Metcalfe,
Ottawa, Canada.**

2ième CONGRES PROVINCIAL

sous les auspices

de

L'ASSOCIATION DENTAIRE du QUEBEC

les 31 mai, 1er et 2 juin, 1956

au

CHATEAU FRONTENAC à QUEBEC

*L'Association Dentaire du Quebec groupe les Sociétés dentaires
de Montréal, Québec, Trois-Rivières et des Cantons de l'Est.*

Règlement Modifié du Prix de Stomatologie de la Société Scientifique de Stomatologie de Belgique

Extrait des Statuts

Un prix de stomatologie, d'une valeur de CINQ MILLE francs belges au minimum, est attribué tous les trois ans à l'auteur, belge ou étranger, ayant présenté, en français, le meilleur travail de recherche scientifique ou de recherche clinique dans le domaine de la stomatologie. Le prix peut être partagé entre plusieurs auteurs d'un même travail. L'attribution en est faite suivant le règlement spécial en vigueur. L'annonce des conditions requises pour la présentation des travaux est faite un an d'avance dans les journaux médicaux belges et étrangers, par les soins du Secrétaire général.

Voici le règlement de ce prix:

Article Premier.—Tout auteur d'un mémoire inédit dans lequel sont consignés les résultats de ses travaux est admis au concours.

Art. 2.—Sont valables les travaux de recherche scientifique ou les travaux de recherche clinique relatifs à la stomatologie.

Art. 3.—Le texte doit être rédigé en français.

Art. 4.—Le manuscrit doit comporter au minimum, en double interligne, 15 pages dactylographiées et 100 pages au maximum, y compris tableaux et clichés.

Les mémoires doivent être envoyés au Dr SERVAIS, 31, boulevard Joseph II, Charleroi, Belgique, Président de la Société Scientifique de Stomatologie de Belgique, avant le 15 septembre de l'année en cours de laquelle aura lieu l'attribution du prix (1956).

Art. 5.—Les mémoires doivent être anonymes. Ils doivent comporter une devise. Celle-ci doit être reproduite sur un pli cacheté joint à l'envoi et dans lequel figurent le nom et l'adresse de l'auteur. Le Jury peut également attribuer le Prix à un travail ou à un ensemble de travaux de recherches déjà publiés, ayant paru au cours des trois années précédant la date de l'attribution du Prix, et dont l'auteur fait parvenir un exemplaire.

Art. 6.—Le Jury est composé de trois professeurs des Universités de Bruxelles et de Liège ainsi que du Président de la Société. Il peut s'adjoindre toute personne qualifiée dans des domaines qui échapperaient à sa compétence. Il juge souverainement. Sa décision est sans appel.

Les candidats renoncent, en participant à ce concours, à toute réclamation éventuelle. Un mémoire non primé peut cependant faire l'objet d'une mention spéciale.

Art. 7.—Le mémoire primé paraît par priorité, en tout ou en partie dans les "Archives de Stomatologie".

Les mémoires non primés ayant fait l'objet d'une mention spéciale peuvent paraître, à la demande de leurs auteurs, en tout ou en partie, dans les "Archives de Stomatologie".

Art. 8.—Les manuscrits restent la propriété de la Société Scientifique de Stomatologie.

Art. 9.—Les mémoires présentés peuvent être considérés comme insuffisants pour que le prix soit attribué à l'un d'eux et, dans ce cas, l'attribution du Prix de Stomatologie est remise à l'année suivante.

Art. 10.—Le prix est remis à l'auteur du meilleur mémoire au cours d'une séance solennelle, à l'occasion de laquelle le Président lit le rapport justificatif établi par le Jury.

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OF THE CANADIAN DENTAL ASSOCIATION

Some indications of the early causes of malocclusion*

by R. R. McINTYRE, D.D.S., F.I.C.D., Calgary, Alta.

THE GRIEVE MEMORIAL LECTURE

INTRODUCTION

I have been asked to present this fourth lecture, known as the Grieve Memorial Lecture—an honour which I greatly appreciate. For those who have graduated in recent years, I should state that soon after this Section was formed this lecture was inaugurated to commemorate the memory of Dr. George W. Grieve, an outstanding Canadian orthodontist, who practised for many years in the city of Toronto and was recognized throughout the world as a leader in his chosen field.

This was the first "Specialty Section" formed in the Canadian Dental Association. One of the main objectives was to present at each annual meeting of the Canadian Dental Association, certain phases of "Preventive Dentistry"—pertaining to the field of orthodontics, that

all those in the general practice of dentistry can and should use.

The purpose of this lecture is to refresh in the minds of those present certain factors pertaining to orthodontics which, through time, have escaped your minds. And further, to present a limited number of recent developments that have a decided bearing on this important aspect of "Preventive Dentistry."

Now if I state or imply certain things that may appear critical, please do not consider them personal—but rather as a general observation.

Thomas Merton has stated—"If a writer is so cautious that he never writes anything that cannot be criticized, he will never write anything worth reading. If you want to help other people, you will have to make up your mind to write things that some other men will condemn"—this at least gives me an "excuse" for what I am about to say—knowing full well that all will not agree.

* Delivered at the C.D.A.-O.D.A. Convention, May 1955.

Why is it that a subject that consumes so much of a student's time during his undergraduate training is so little used by those in General Practice five years after graduation? In fairness to the various dental schools in Canada I personally think this situation is improving in a most commendable manner. But may I further suggest that those engaged in this "specialty" have not in the past done their share in imparting the desired information to those in general practice. I feel that this is not a selfish motive, but rather something that has been neglected. The need is definitely present, because those in general practice most frequently see the children first and also at an early age. Somehow the general concept has developed that orthodontic services should not be started until a child is around the age of twelve. This idea is held by certain orthodontists. Other men in the specialty are firmly convinced that a considerable good may be accomplished in the "Preventive Field" by early intervention. I happen to belong to the latter group, and propose to show on the screen some of the factors that tend to produce dental anomalies which, if not early corrected, may produce most unsatisfactory results "before" the age of 12, and last through life unless corrected.

The theme of this convention is dental progress through applied research. You all recognize the progress in the last twenty-five years in local anesthetics, prosthetics, casting techniques, etc. I pause now to emphasize that through applied research in orthodontics as great, or even greater, advances have been made in the Specialty of Orthodontics than have been made in any other branch of dentistry. I shall not burden you with a lengthy outline, but feel that I should mention that by "Research" it has been shown that certain factors in "Heredity" are established at conception, yet environment plays an important part within the limits imposed by heredity. Considerable knowledge has been gained in the field concerning the functioning of the various glands, and particularly those concerned

with Growth and Development. Much has been accomplished in dealing with favorable and unfavorable habits, more is known concerning the desirable functioning of muscles. Superimposed on all this, is the much discussed topic of diet.

A most important advance has been made by "research" in metallurgy, and this knowledge is applied in the selection of materials and their use, in the formation of appliances used in treatment by those who practise orthodontics.

Of somewhat recent times there has been developed a technique known as "Cephalometrics" in which, by the use of X-rays, the existing position of the condyle is indicated. This knowledge is also of considerable value in the field of Prosthetics.

Last year, at the meeting of the Canadian Dental Association at St. Andrew's, Dr. Waugh of New York presented the Grieve lecture and showed several excellent slides on "Early Development". Today with his permission and kind co-operation I shall show a limited number of these slides, followed by others I have prepared, showing what is an ideal condition—there being no such thing as normal except for general discussion. I shall try to point out the desirable features in the deciduous dentition that will tend for the favorable eruption of the permanent teeth, into normal relationship, as "intended by nature". Following this I shall show you some of the factors that, if neglected, tend to produce from "minor" to "very major irregularities", which you all see so frequently.

Figure 1. This shows the "Rapidity of Jaw Growth" from birth to maturity and graphically the four phases which indicate the ages when we may anticipate the most rapid horizontal growth.

Figure 2. Shows at birth 24 dental follicles, 20 deciduous and 4 of the first permanent molars. The crowns of the deciduous teeth have attained their full mesial-distal width and are in normal position for eruption. This explains why

*Illustration of Dental Development from Conception to Maturity for Guidance in Orthodontic Practice
Compiled by Leuman M Waugh, D.D.S., B.C.D. (Hon. Montreal)*

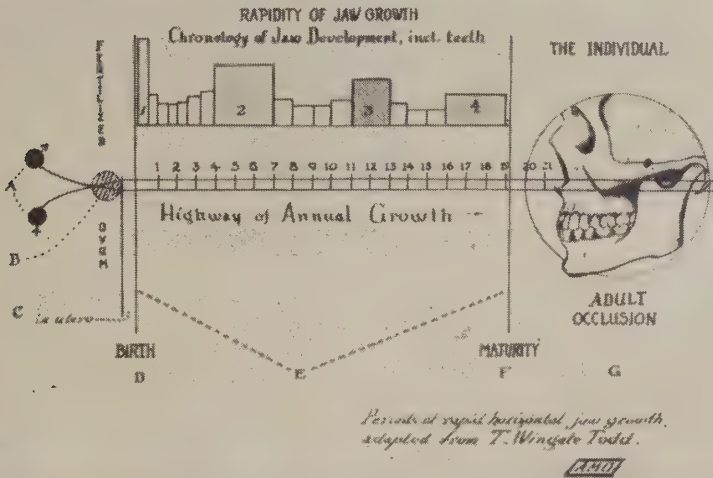


FIGURE 1

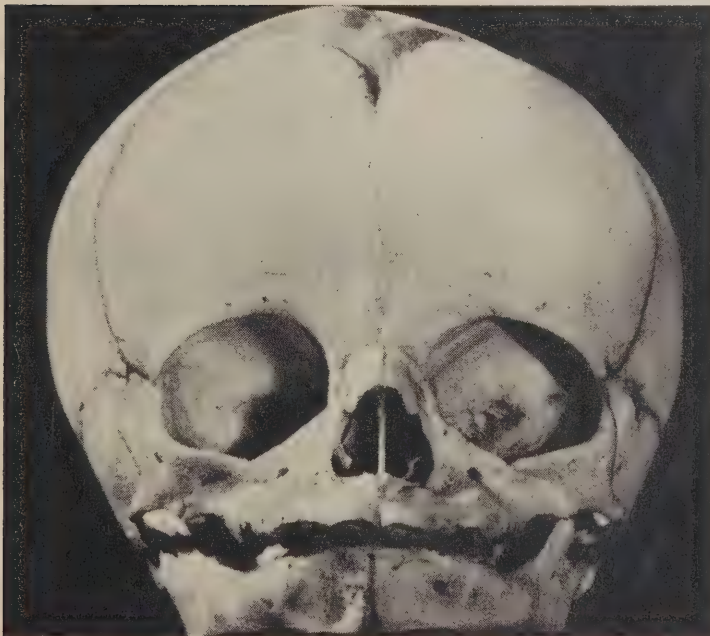


FIGURE 2

we need this horizontal growth early, which normally takes place from the 21st day to the seventh month, when the lower deciduous incisors erupt.



FIGURE 3

Figure 3. Shows the comparison of two skulls. The one on the left, at birth, the one on the right at maturity. At birth the face forms one ninth of the size of the head—whereas at maturity it has

grown to one third. This rapid growth of the face is necessary for the accommodation of the teeth. "If the teeth develop and the bones do not, an unfavorable alignment of permanent teeth may result."



FIGURE 4

Figure 4. Here is shown the normal position of the mandible at rest, in the early life of an infant. At this age it must be carried forward in nursing so that the lower gum pads are directly below the uppers, that the milk may be sucked into the mouth. It is suggested

that at an early age children who are "bottle fed" are handicapped. The bottle and nipple are frequently "held at an angle" and prohibit the mandible from moving forward and the muscles early become accustomed to an unfavorable pattern.

FIGURE 5

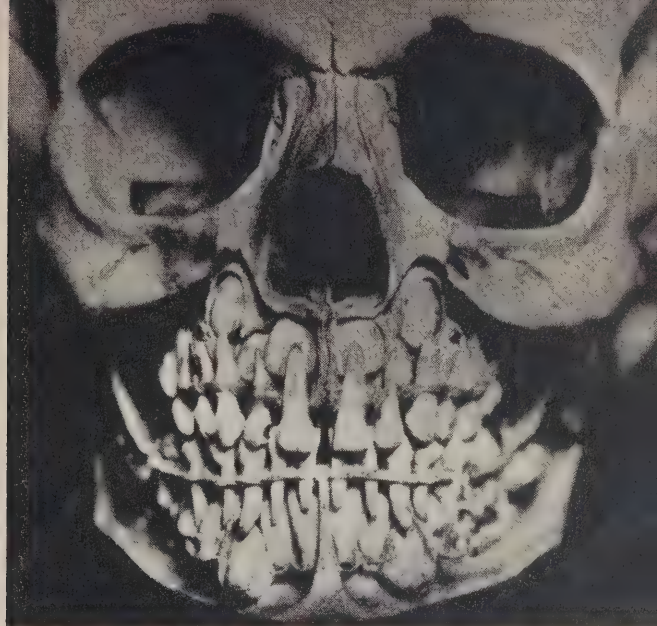
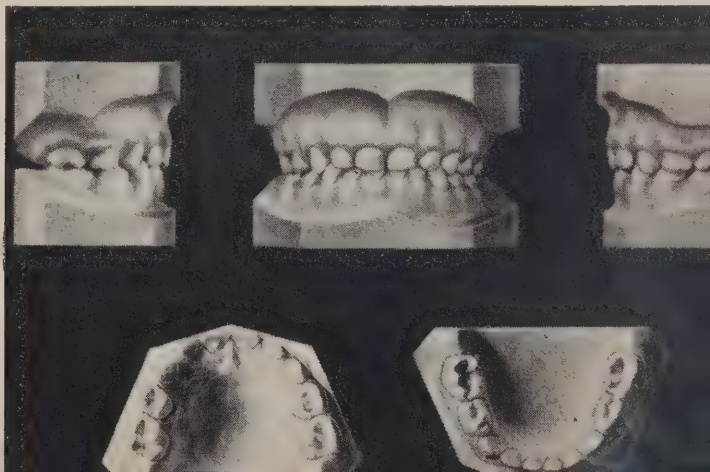


Figure 5. This skull is of a child age five. Note the spacing of the upper deciduous teeth in preparation for the eruption of the permanent centrals—which as you all know, are of considerably greater mesio-distal width. From a general viewpoint, one may well wonder how the permanent teeth will ever arrive at any semblance of a harmonious alignment, and all too frequently they do not. I shall not go into all the variable factors and various active forces during this very interesting period in our lives.

Figure 6. This slide shows what is termed "ideal" of a child five years of age. Two points here should be noted. *First*—the "intended" wear particularly in the canine region. *Secondly*—the rela-

tionship of the distal borders of the second deciduous molars. Here is an important point in your routine examinations. All of you of necessity must examine these young patients with their mouths open. It is suggested that when you have completed your services, have the patient close in centric that you may note the relationship of the distal borders of the second deciduous molars. Then have these young patients perform the lateral and protrusive movements of the mandible and if there is a cusp interference, which is most frequently manifested in the canines, this should be removed as is done in prosthetic service. This will increase masticating efficiency and tend to establish a "normal muscle pattern" early in life.

FIGURE 6



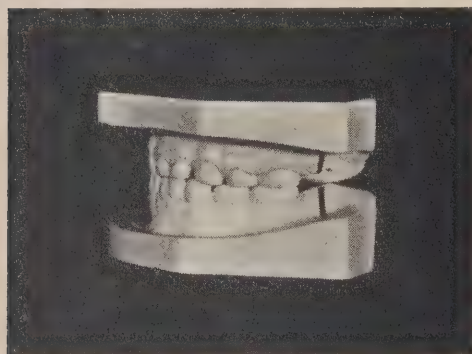


FIGURE 7



FIGURE 9

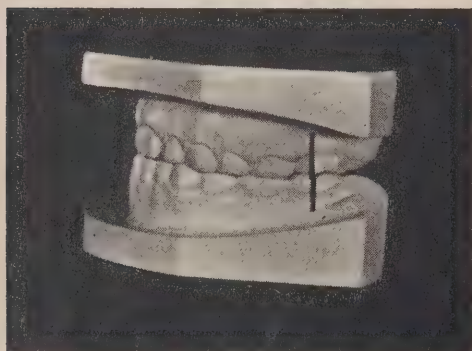


FIGURE 8

Figures 7, 8, & 9. The slides numbered 7, 8 and 9 will show the "Ideal" development of which I have been speaking. Just prior to the eruption of the upper permanent first molars, the lower jaw should appear to move forward and the upper deciduous incisors should have an "end to end bite", a condition which we all too seldom see. Now you will also note that with this forward drift the distal borders of the deciduous second molars are no longer in vertical relationship, the lower has moved forward, which is "Ideal". In these slides the black lines are placed on the "upper" over the mesio-buccal cusp, on the "lower" in the mesio-buccal groove of the permanent first molars. Under favorable development these lines should be joined into a vertical straight line, depending on the rapidity

of development of the individual. This "Ideal" relationship of the first permanent molars is termed "the key stones" of normal occlusion.

It is suggested that "our civilization has advanced beyond our physiological accommodation". Nature "intended" that we use a type of food that would "wear or grind" the deciduous teeth adequately and favorably. Such is not the case in our present diet. We should therefore supplement this "intended wear" by artificial grinding where indicated which, most frequently, is in the high cusps of the deciduous canines. There are many examples in nature where certain species accommodate themselves to environment. The rabbit changes his coat; the bass found in the quiet waters are broad; while the trout in the fast streams are thin and narrow; the pines on the mountain tops have leaves whose "form" gives the least surface for evaporation where moisture is scarce; while the ferns in the valleys have large flat leaves, the moisture being plentiful.

The few examples I have mentioned are what we may term "natural accommodation to environment". With the exception of the primitive races, the human race does not appear to have adapted itself to "our advanced civilization", at least insofar as the desired "intended natural wear" of both the deciduous and permanent dentitions is concerned. May

I suggest that consideration be given to the "adjustment of the deciduous dentition", because it is at "an early age" that certain phases of malocclusion are initiated. You all have restorations made in your mouth that needed slight occlusal adjustment and have appreciated the increased comfort and efficiency attained when this service was rendered. In young children, even though no teeth have been lost, because of our present type of diet, the natural normal wear that nature intended does not take place and children readily adopt a "bite of accommodation". This may be readily altered by judicious

artificial grinding as is done in denture service. The result is increased masticating efficiency and comfort, and also aid in assisting in a normal growth pattern and a favorable muscle development as intended by nature.

Now, aside from unfavorable habits, heredity, defective growth patterns, etc., I shall try to present some of the factors that are frequently present and that tend to initiate in the deciduous dentition a defective alignment, that later is carried over into the permanent dentition.

When should this be done?

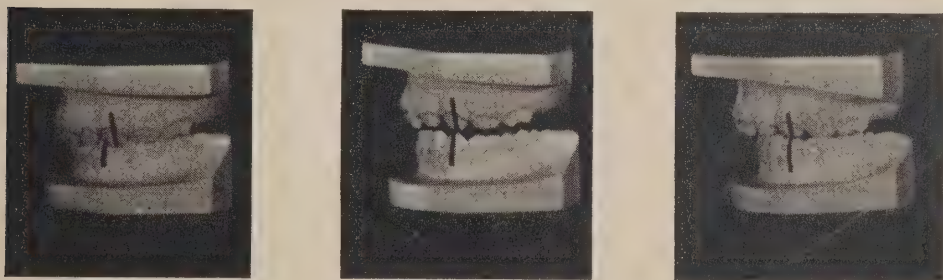


FIGURE 10

Figure 10. This is of a child four years old. On the left of these three is a lateral view of the child in centric, and you will notice the abnormally high deciduous canines. The centre picture shows the

child in a "lateral bite" and note the height of the canines. The third picture shows where the canines have been reduced, giving this child a "freedom of movement of the mandible".

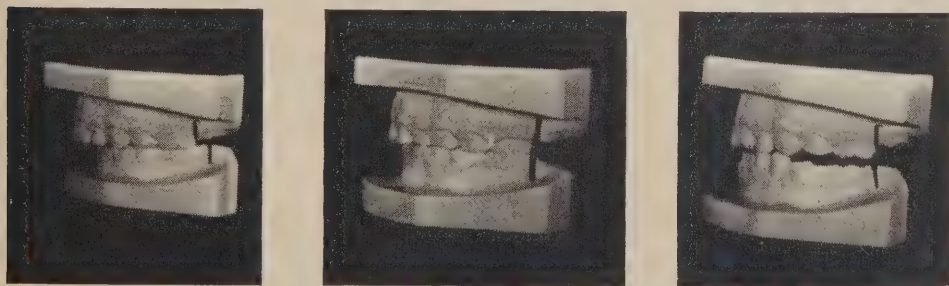


FIGURE 11

Figure 11. This is of a child six in centric occlusion, shown on the left. Note at this early age the distal borders of the

deciduous molars are not vertical as indicated by the black lines, hence the permanent molars now erupting will not

erupt into ideal relationship.

The centre figure shows the child in a protrusive bite and the black lines indicating a favorable relationship mesio-distally, but the child will be unable to masticate satisfactorily, the deciduous canines require grinding, to permit greater efficiency of mastication.

The figure on the right shows the result after the occlusal adjustment has been performed. You will now see that the black lines are vertical, increased function is established and the jaws are in the desired relationship for the eruption of the first permanent molars. If this service is too long delayed, an unfavor-

able muscle pattern may be established and the mandible remain in a retruded relationship, which in many cases may be overcome by corrective exercises.

The effectiveness of "occlusal adjustment" or grinding, was evidenced many years ago by the farmers who, early in the spring, "floated" the teeth of their older horses. This service was performed by the use of a rasp which removed the interfering cusps and the sharp edges on the buccal and lingual surfaces of the molars that were causing the horse to bite the tongue or cheek, the result being, without any change of diet "the horses fattened up".

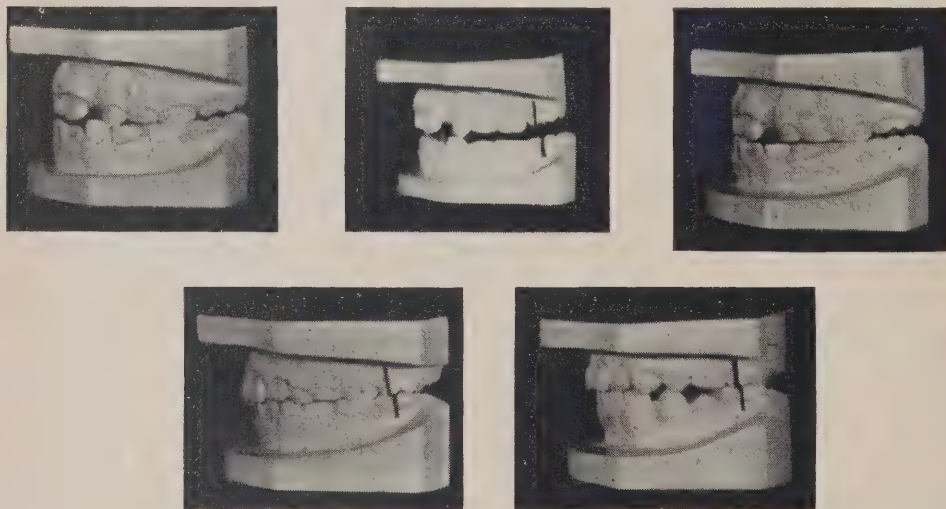


FIGURE 12

Figure 12. Shows the child age 7 in a "bite of accommodation" but "protrusive" to normal or "class three". This too has been produced by deciduous canine interference, as is shown in the upper centre picture, when an effort is made to retract the mandible "only the canines touch". The picture on the upper right shows where the canines have been reduced then, with a limited use of a tongue depressor, the upper anterior teeth and the permanent first molars assume the desired relationship as shown on the lower

right, which shows an almost "Ideal" relationship of the first permanent molars awaiting the eruption of the bicuspid.

All will agree that children early establish "habits" favorable, or otherwise. Somewhere we have overlooked the fact that the muscles of mastication are a "part of children" and that they too, early develop habits or patterns favorable, or otherwise, hence the need for early care. You also have seen cases where the mandible was forced distally by the habit of thumb sucking, yet, when

the habit was overcome, the desired improvement regarding the desired relationship of the jaws did not take place.

Two factors which are frequently present are:

A. Cusp interference.

B. An unfavorable muscle pattern is established.

It would be fair to suggest that at least part of this service and responsibility properly falls within the field of those who practise general dentistry, who see these children at an early age at which time a great good can be done in the "Preventive Field". The more obscure conditions may well be referred to those in the practice of orthodontics.

With all deference to those who practise periodontics, but insofar as my limited knowledge of the subject goes, I understand that "occlusal balance" in the permanent dentition is desirable and obtained by "artificial grinding". Why has this treatment not been more generally used on the deciduous dentitions, if the need is manifested?

I now hesitate before introducing a "touchy subject". Nevertheless, I am convinced that some of those in general practice do not as a routine examination of children take an adequate number of X-rays. Is there any other method by which existing conditions may be disclosed? The general reply is that, "parents are unwilling to pay for such services". With this statement I do not agree, X-rays are cheaper and quicker than local anesthetics, which in these "modern days" are always used in dentistry. How can we justify our position if "later X-rays" disclose missing teeth, supernumerary, or any of the various anomalies that exist more frequently than is generally supposed?

Now let us be fair in these matters, many of these patients come to our offices too late and in the interest of economy or time, X-rays are not taken. May I suggest that these and many other conditions are present more frequently

than we realize and if, for no other reason than the protection of our professional reputation, X-ray services should be suggested and, if declined, a notation to this effect made on the record.

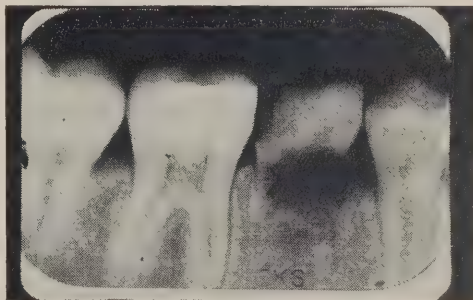


FIGURE 13

Figure 13. This slide shows what I have been speaking about. You have all seen these conditions and now the deciduous tooth is about to be lost, spacing will occur and the usual sequela follows of cavities and periodontal troubles.



FIGURE 14



FIGURE 15

Figure 14. Here we see a supernumerary tooth of a child of five years of age interfering with the normal development of the permanent centrals.

Figure 15. Shows a girl of nearly nine years of age where supernumerary teeth back of the permanent centrals have inhibited the eruption of the left permanent centrals, you can see the permanent laterals are almost completely developed.

If I am able to leave one thought with

you today that will enable you to better serve the public, I know of nothing of greater importance than the early and continual use of your X-ray machines, combined with a *satisfactory interpretation of the end products.*

A condition frequently overlooked is that known as "Ectopic or unnatural eruption". The cause is debatable and obscure. I shall deal with upper first permanent molars only. Early X-rays indicate the trend but, upon eruption, the first permanent molars appear "locked" against the distal borders of the second deciduous molars and, in many cases, the roots of the deciduous molar are absorbed and the permanent molars are migrating forward, which in turn reduce the required space for the bicuspid.

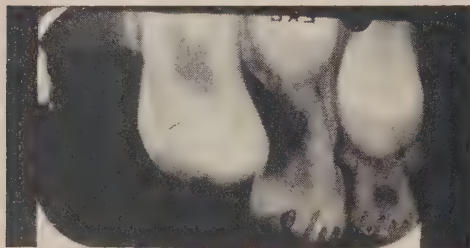


FIGURE 16

Figure 16. Indicates a condition "too far advanced" for the treatment and might well be referred to those who practice orthodontics.

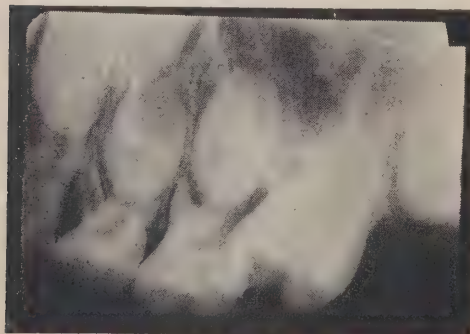


FIGURE 17

Figure 17. This is the X-ray of a similar condition, but not so far advanced.

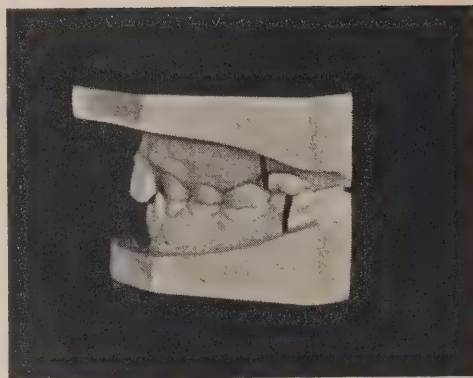


FIGURE 18

Figure 18. Shows the model of the above case and the black line on the upper molar indicates the forward drift.

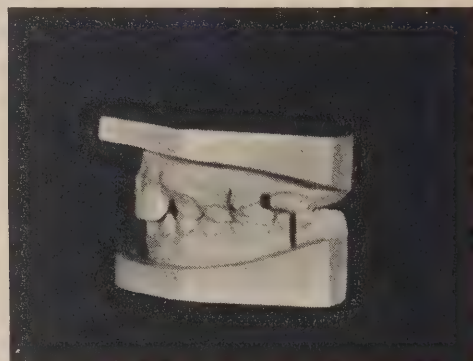


FIGURE 19

Figure 19. Shows where a 22 gauge brass wire ligature has been placed between the first permanent and the approximating deciduous molar. This may need to be replaced two or three times and also in double or triple strands and twisted tightly, to move the permanent molar distally, the stump of wire being bent into the embrasure.

Figure 20. Shows where a well fitted copper band has been placed over the deciduous molar, making certain it is "well past" the point of contact of the permanent tooth as indicated in the X-ray shown in *Figure 21.*

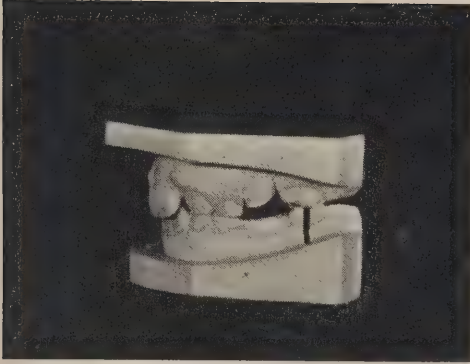


FIGURE 20

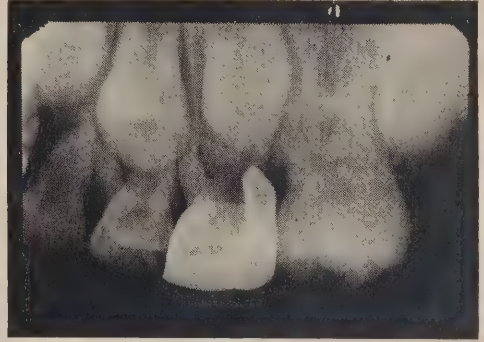


FIGURE 21

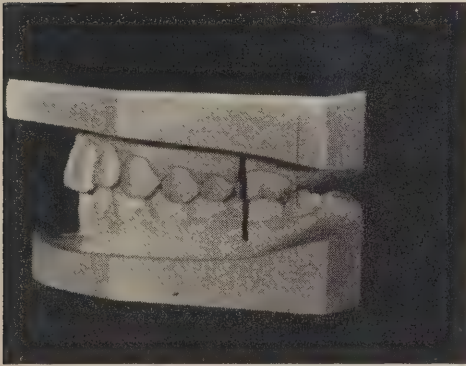


FIGURE 22

Figure 22. Indicates the final result.

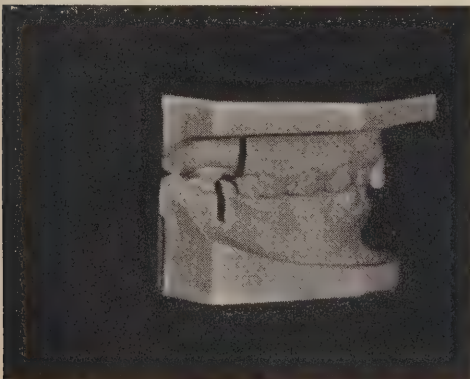


FIGURE 23

Figure 23. Indicates a condition in a lad at six years of age advanced too far.



FIGURE 24

Figure 24. Shows where the second deciduous molar is extracted preceding orthodontic treatment. Please note the forward shift of the upper molar which should be back far enough that the black lines are vertical.

These conditions are often misleading, a casual glance would show a decidedly favorable deciduous dentition, the arches well developed and the distal borders of the deciduous molars favorable. This last named factor being of great importance, it is suggested that part of the routine examination include a notation of the relationship of the arches when the teeth are closed in centric.

There is yet another condition that is very prevalent and is seen from early life and does exist throughout the life of certain individuals. I refer to "Faulty Tongue and Lip Habits".

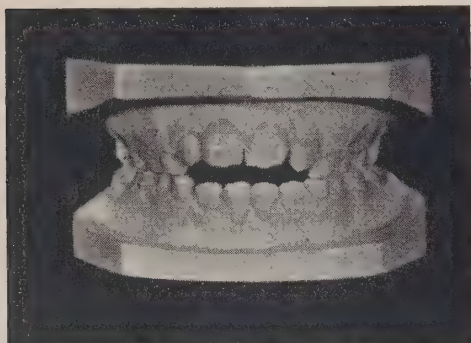


FIGURE 25

Figure 25. Indicates a "tongue thrusting" of a boy aged 9.

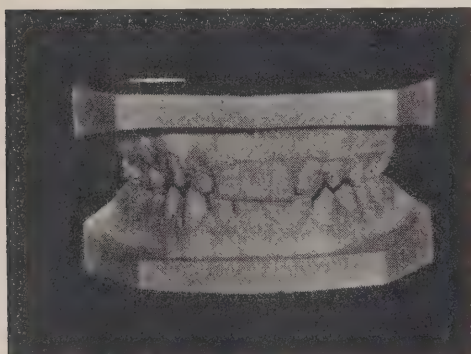


FIGURE 26

Figure 26. Shows the "results obtained" with a minor appliance once the habit was overcome by adequate instruction and co-operation by the patient.

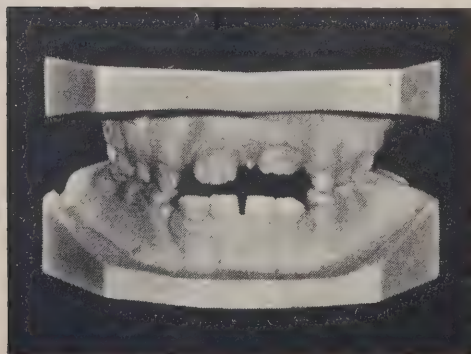


FIGURE 27

Figure 27. This again shows the results of a "tongue thrust" and note the spacing of the lower centrals.



FIGURE 28

Figure 28. Shows the improvement once the habit was overcome and "no appliance was used".

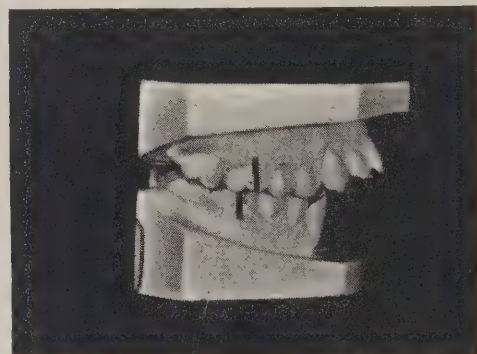


FIGURE 29

Figure 29. Shows a lateral view of a girl 20 years of age who gave an "early" history of thumb sucking which was stopped when she entered school, but the tongue thrusting persisted to such a degree that when swallowing, the tip of the tongue was placed near the anterior part of the palate, while the main body of the tongue was thrust forward completely filling the space, as shown in *Figure 30*. This action was so vigorous that the lower teeth failed to erupt beyond the normal line of occlusion.

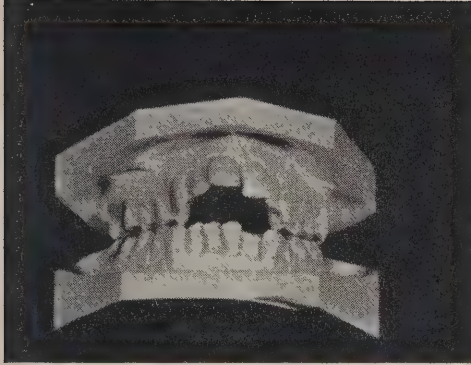


FIGURE 30

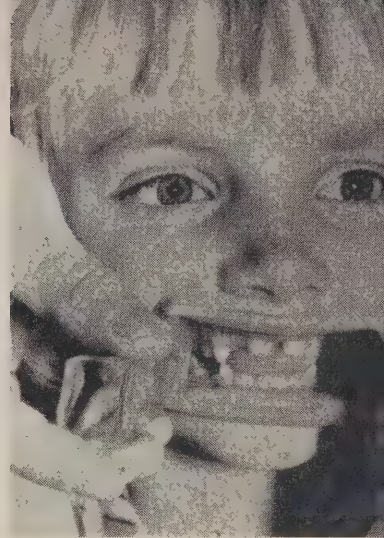


FIGURE 32



FIGURE 31



FIGURE 33

Figure 31. Shows a girl age 7. Note the parted lips, thick and lacking in tone.

Figure 32. Shows the lips retracted and note the tongue at rest inhibiting the normal tooth eruption, also the deciduous canine interference.

Figure 33. Shows a wire grid that is sometimes placed which will inhibit the tongue thrusting, also enable the teeth to erupt, but if the habit of "tongue thrusting" persists after the grid is removed little service has been rendered.

SUMMARY:

The following is suggested:

- (1) The "early and continual" use of X-rays.
- (2) The closed mouth examination of children so that the relationship of the distal borders of the second deciduous molars may be noted.
- (3) That where indicated, the occlusal adjustment of the deciduous dentition be completed, as evidenced in the various excursions of the mandible.
- (4) With the teeth closed in centric, a small quantity of water is injected, one or both sides of the lips retracted, and the child asked to swallow so that the tongue position may be noted.

The responsibility of diagnosis

by HUGH M. EATON, D.D.S., F.A.C.D.,* Halifax, N.S.

I have been rather impressed over the last few years by the apparent lack of responsibility on the part of a number of general practitioners of dentistry to give the patient the one thing he has a right to expect—an honest examination and diagnosis. Now I would not for a moment accuse the vast majority of my confreres of any delinquency; on the other hand we see patients from time to time in which we find it hard to accept that they have received the conscientious dental care to which they are entitled and which they thought they were receiving.

So this article is written, not at all in a spirit of condemnation, but rather as a challenge to each one of us to render that service, especially in examination and diagnosis, which the patient so confidentially and rightly expects of us. There is no question in my mind, that I, and many others of us, have failed our patients to some extent at least in the past; but my observations over the past few years, have, I hope, served as a challenge and a stimulus to be more observant, more careful in my examinations and more logical in my diagnosis.

Place yourself for a moment in the position of the patient. If you consult your physician regarding pain in the inferior right abdominal quadrant are you satisfied to be dismissed with a conjecture from your doctor that perhaps it is a mild indigestion, or do you trust him to differentiate, for example, between indigestion and an inflamed appendix? Do you expect him to distinguish between an intercostal neuritis as against a heart lesion? Or if your eight year old son develops a limp with pain sensation just above the knee, have you a right to expect your physician to make a sufficiently careful examination and diagnosis so that Legge-Perthé's disease, or osteo-chon-

dritis, is not dismissed as being a simple sprain developed from romping with the other children? The answers are, of course, very patent.

So has your patient and mine the right to expect a careful examination and a considered diagnosis. That degree certificate from your provincial dental board or national body should signify to those who seek your services that you are *fully qualified in all respects* to render reasonable skill of hand and mind to those who put their trust in you.

Let me illustrate by a few actual cases:



FIGURE 1

1. Here is a young lad of eleven years whose family dentist discovered the pathological lesion around the lateral incisor (Fig. 1). He was about to remove the offending tooth as being, in his opinion, beyond the scope of reasonable success with endodontic measures. However on studying the patient and the x-rays, and being conscientious in the care of his patient, he felt there might be more to the condition than his abilities had discerned. He therefore had no hesitation in referring the case to a confrere in another city who diagnosed the case as a globulo-maxillary cyst complicated by a pathological lateral incisor. I say this dentist rendered his patient a real service by seeking consultation with a con-

* Faculty of Dentistry, Dalhousie University.



FIGURE 2

frere where he, himself, had some doubts. The consultant based his primary diagnosis on the rotation and distal inclination of the cuspid—a more rugged tooth than the lateral incisor—as being typical of a globulo-maxillary cyst and secondary diagnosis of a pathological lateral incisor caused by severe trauma, the child having fallen off a bridge about a year or more before. The oral surgeon, on operating on this case, confirmed the diagnosis.

2. Now let us look at the case of Miss ———. Here we have a young lady of eighteen years who left home in order to enter the nursing profession. In July, of the year in question, her family dentist signed a statement to the effect that he had examined her mouth and found it in good condition. In October of the same year, only three months later, she complained of a numbing feeling in the chin. The Superintendent of Nurses of the hospital referred the student to her own dentist who found upon examination a dying pulp in the lower lateral incisor. That bit of ill-fortune might be the lot of any of us three months after dental examination. But a further—and as yet incomplete—examination of her mouth shows the young lady has three superior incisors in such a pathological state that it is questionable if they can be saved, a fistulous opening from one of them, an inferior molar, likewise with a fistula, and numerous teeth

with very serious carious lesions. Fig. 2 shows some of the points to which reference has been made. Are you satisfied that her family dentist, who certified that her teeth were in good condition, has upheld the honor of our profession or rendered conscientious service to his patient? Should this be a challenge to each of us to “do unto others as we would have others do unto us”?

3. Or take the case of the three teenage children whose parents moved from a western to an eastern city. In November these children were examined, all necessary restorative work completed and pronounced dentally fit by the regular dentist of that family. In the following March, only four months later, one of the children complained of a dental disturbance and subsequently all three children were brought in for a dental examination. This dentist, on careful scrutiny and bite-wing x-rays, found a total of thirty-six cavities in the three children. Are you satisfied that all these caries developed in four months?

4. For over two years Mr. B. had suffered with a recurring soreness of the palate, associated at times with severe pain. On seeking relief for his trouble he was given, on prescription, some antibiotic lozenges and a mouth wash. In spite of this—and I use the phrase deliberately—the symptoms would improve only to exacerbate again at a later date. Finally, during a extremely painful recur-



FIGURE 3

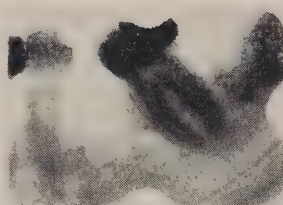


FIGURE 4

rance of the condition, being unable to contact his attending doctor, he sought relief from another dentist. The mischief was immediately diagnosed as a median anterior maxillary cyst, confirmed by x-ray (Fig. 3), and oral surgery. But why had the first man never taken the trouble to get at the root of the lesion, nor even to x-ray the condition? Is it any wonder that we sometimes hear physicians and dentists referred to by the public in not too glowing terms?

5. Finally let us consider the care of Mrs. H. We have here a young woman of about 25 years of age, who, with her husband, gave every evidence of being very respectable people, but sadly lacking in this world's goods. As if that were not enough Mr. H. was suffering from congenital (?) cataracts of both eyes, one of which had been successfully operated on only a short time before they came to my office. And as if that were not cross enough for them to bear Mrs. H., in August, was discovered to have a moderately advanced case of tuberculosis necessitating hospital treatment. And as if that were still not enough she began suffering, about two weeks after entering hospital, with an acute pulpitis. All her teeth were x-rayed, antibiotic treatment initiated, and a dentist in the town was called in and extracted a tooth on

the *opposite* side of the mouth, to see, according to his letter, if that might help her; but to no avail. Finally in the following January, being well enough to be released from hospital for one week, she was referred to me, together with the dental x-rays taken in the hospital. It took only a couple of minutes to find, with simple explorer and mirror a deep subgingival cavity which was also readily discernable, of course, in the x-ray (Fig. 4). She was required to return to the hospital the following day and took with her a written request that this tooth be removed. I have in my files a letter written some two or three weeks later expressing gratitude for relief from months of pain—pathetic in its wording but a condemnation of what should have been an immediate and simple diagnosis.

What can we do about this? One suggestion might be that our local societies put on one or two evenings of well written and well presented case histories accompanied by suitable diagrams and slides. Or perhaps you have a better suggestion. But the paramount objective must be that each one of us examine ourselves and the service that we are giving to our patients and conscientiously endeavor to render an examination and diagnosis service which will be a credit to our chosen profession.

There seems to me a natural law that regulates the advance of Science. Where only observation can be made, the growth of knowledge creeps; but where laboratory experiments can be carried on, knowledge leaps forward.

Faraday, *Journal of Oral Surgery*, January 1956.

Dental Prescription Guide*

by D. A. MANORE, B.Sc. Phm., Port Arthur, Ontario

ANALGESIC PREPARATIONS

GENERAL

Patient's Name	DATE	
R A P C & C gr. i	(Frosst 294, Empirin No. 4)	Contain Codeine Phosphate 1 grain, combined with A S A, Phenacetin, Caffeine
Mitte: vi		
Sig: i q4h prn severe pain		
R A P C & C gr ½	(Frosst 292, Ayerst 334, Empirin No. 3)	Contain ½ grain Codeine Phosphate in combination with others v.s.
Mitte: xii		
Sig: i q4h prn pain		
R A P C & C ¼	(Frosst 282, Ayerst 304, Empirin No. 2)	Contain Codeine Phosphate ½ grain in combination with others
Mitte: xii		
Sig: i q4h prn pain		
R A P C		Analgesic compound without Codeine
Mitte: xii		
Sig: i prn pain		

FOR PATIENTS c A. S. A. SENSITIVITY

Patient's Name	DATE	
R Cibalgine (Ciba)		Each tablet contains Dial (Diallylbarbituric acid) ½ gr. and aminopyrine 3½ grains
Mitte: xii		
Sig: i-ii q3-4h prn		
R Dolomide Compound (Frosst)		Each tablet contains Salicylamide 5 grains Phenacetin 2 grains Caffeine Cit. ¼ grain
Mitte: xii to xxiv		
Sig: i-iv tablets one to four times daily prn		
R Nembudeine ¼ or ½ (Abbott)		Each tablet contains Nembutal Abbott ¼ grain Phenacetin 5 grains Codeine Sulphate ¼ or ½ grain
Mitte: xii		
Sig: i q3-4h		

PAEDIATRIC ANALGESICS

Patient's Name	DATE	
R A P C & C 1/16 or 1/32		Small tablets colored and flavoured especially for paediatric use
Mitte: xii		
Sig: i q4h prn pain		

*This paper was presented as a Clinic by Mr. Manore, a member of the Thunder Bay Pharmaceutical Association to the Thunder Bay Dental Society.

R A S A Dulcet (Abbott)
Mitte: xii
Sig: i prn pain

Specially prepared cubical tablets sweetened and flavoured, intended for use on small children. Each contains 1 grain of A S A

R Acetophen gr i (Frosst)
Mitte: xii
Sig: i prn pain

Each tablet contains 1 grain of A S A

ANTIBIOTICS

PENICILLIN PREPARATIONS

Patient's Name Address	DATE	
R Pentids 200 (Squibb) Mitte: xii Sig: i b-tid on empty stomach	R Pentids 600 (Squibb) Mitte: xii Sig: i b-tid on empty stomach	Each tablet contains 200,000 and 600,000 units respectively of Penicillin G Potassium
R P G A (B D H) 0.25 Mitte: xii Sig: i b-tid on empty stomach	R P G A 0.5 (B D H) Mitte: xii Sig: i b-tid on empty stomach	Tablets of Penicillin G Ammonium 0.25—444,250 units 0.5 —888,500 units
R Bicillin 200 L-A (Wyeth) Mitte: xii Sig: i q8h	R Duapen 200 P. A. (Ayerst) Mitte: xii Sig: i q8h	Tablets of Benzethacil Penicillin 200,000 units. Stable, long acting, capable of maintaining prolonged blood levels. Unaffected by gastric secretions
R Hylenta (Ayerst) Mitte: xii Sig: i tid		Each tablet contains 500,000 units of Penicillin G Potassium. New binding agent prevents disintegration of tablet in the stomach. Rapid disintegration and absorption in duodenum
R Pen-Vee Oral (Wyeth) Mitte: xii Sig: i tid		Each tablet contains 200,000 units of Penicillin V (Phenoxymethyl Penicillin). Acid stable, alkaline soluble
R Bicillin-Vee (Wyeth) Mitte: xii Sig: i q8h		Each tablet contains Penicillin V 100,000 units Bicillin 100,000 units
R V-Cillin (Lilly) Mitte: xii Sig: i q8h		Each capsule contains 200,000 units of Penicillin V. For children capsules may be opened and contents given in fruit juice. (Not milk since the combination is bitter.)

PAEDIATRIC PENICILLIN PREPARATIONS

R Bicillin 100 (Wyeth) Mitte: 3 ii Sig: 3i q6h	R Duapen 100 (Ayerst) Mitte: 3 ii Sig: 3i q6h	Each teaspoonful contains 100,000 units of Benzethacil Penicillin. Also available in 300,000 units (Bicillin 300, Duapen 300)
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R Compocillin Suspension (Abbott)

Mitte: $\frac{3}{4}$ ii
Sig: 3i q6h

Each teaspoonful contains 300,000 units Hydrabamine Penicillin G in a palatable aromatic vehicle

R Penasoid Suspension (Parke-Davis)

Mitte: $\frac{3}{4}$ ii
Sig: 3i q6h

Each teaspoonful contains 300,000 units of Penicillin G in stable coconut oil base

All these suspensions are stable at room temperature. They are pleasantly flavoured and ideally suited for the administration of Penicillin to children

PENICILLIN-SULPHONAMIDE PREPARATIONS

Most of the penicillin preparations mentioned in the previous section are available in combination with triple sulphonamides. The usual strength of the sulphonamides is 7.7 grains (0.5 gram) per dose.

TABLETS

Pentids-Sulfas (Squibb)
P G A-Sulfas (B D H)
Bicillin-Sulfas (Wyeth)
Duapen-S (Ayerst)

R Trulfacillin 7½-100
Mitte: xii
Sig: i q4h

SUSPENSIONS

Bicillin-Sulfas (Wyeth)
Duapen-S 150 (Ayerst)
Penasoid c
Triple Sulpha (Parke-Davis)

R Trulfacillin 7½-100
Mitte: $\frac{3}{4}$ ii
Sig: 3i q6h

Tablets also available in 5-25 strength. Suspension in 3-100 and 3-200 strength. Tablets contain penicillin G Potassium and suspensions Benzethicillin

OTHER ANTIBIOTICS

Chloramphenicol

A broad spectrum antibiotic marketed by Parke-Davis & Co. under the trade name "Chloromycetin". Available in capsules of 250, 100, and 50 mg., it is effective against a variety of virus, rickettsial, and bacterial infections. For paediatric use, there is a suspension of Chloromycetin Palmitate, each teaspoonful containing 125 mg.

Erythromycin

Available under the trade names "Erythrocin" (Abbott), and "Ilotycin" (Lilly), it is presented in a variety of forms. 100 and 250 mg. tablets, in Paediatric suspensions and in combination with triple sulphonamides. Useful for treating patients with penicillin sensitivity or resistant organisms.

Tetracycline Group

The members of this group are broad spectrum antibiotics, available in strengths of 250, 100, and 50 mg. in almost all cases in capsules or tablets and also available in suspensions, syrups, and paediatric drops. They are effective against gram positive, gram negative, and some rickettsial infections.

Tetracycline-Achromycin (Lederle), Panmycin (Upjohn), Steclin (Squibb), Tetracycline (Pfizer)

Chlorotetracycline-Aureomycin (Lederle)

Oxytetracycline-Terramycin (Pfizer)

Non-Sensitizing Narrow Spectrum Antibiotics

This group is used in mild infections which can be treated topically in the form of ointments, lozenges, etc., and are almost invariably used in combination. The group includes Bacitracin, Gramicidin, Neomycin, Polymixin, and Tyrothrycin.

ANTIHAEMORRHAGIC PREPARATIONS

Patient's Name Address	Date	
R Synkavite (Roche) Mitte: xii Sig: i-iii daily as indicated		Each tablet contains 5 mg. of a salt of synthetic Vitamin K equivalent to 2.5 mg. of pure Vitamin K
R Synkamin (Parke-Davis) Mitte: xii Sig: i or more daily as indicated.		Each Kapseal contains 4 mg. of a salt of Synthetic Vitamin K equivalent to 4.4 mg. of pure Vitamin K

FLUORIDE PREPARATIONS

Patient's Name Address	Date	
R Enziflur (Ayerst) Mitte: C Sig: i dissolved slowly in the mouth qhs		Each tablet contains Calcium Fluoride 2 mg. Vitamin C 30 mg. Vitamin D 400 units Possible aid in the prevention of dental caries
R Enziflur (Ayerst) Mitte: xii Sig: Let i dissolve slowly over sensitive area		Appears to be beneficial in alleviating the pain of sensitive areas

FUNGISTATICS

Patient's Name Address	Date	
R Mycostatin (Squibb) Mitte: xii Sig: i tid		Each tablet contains 500,000 units of Nystatin anti-fungal antibiotic. Use for treatment and prevention of intestinal moniliasis
R Mysteclin (Squibb) Mitte: xii Sig: i qid		Each capsule contains Nystatin 500,000 units Tetracycline 250 mg. Combined therapy to prevent monilia overgrowth due to action of tetracycline
R Gentian Violet 1% Mitte: fl̄i Sig: Paint mouth bid		

PREOPERATIVE SEDATIVES

Patient's Name Address	Date	
R Anatensin B D H Mitte: vi-xii Sig: i capsule one hour before appointment		Each capsule contains Mephnesin 0.25 gm. Acetylcarbromal 0.25 gm. Relaxant and sedative for alleviation of anxiety states

R Anxine (Allen & Hanbury)
Mitte: vi
Sig: Tabs i 1 hour before appointment

R Nembutal gr $\frac{1}{2}$ or $\frac{3}{4}$ (Abbott)
Mitte: vi
Sig: i capsule before appointment

R Tolserol 0.5 (Squibb)
Mitte: xii
Sig: q.s. i hour before appointment

Each tablet contains
Dexamphetamine
Sulphate 2.5 mg.
Cyclobarbitone 35 mg.
Mephenesin 120 mg.
For the relief of anxiety
states. Should not be used on
children

Each capsule contains Pento-
barbital Sodium. Produces
quite rapid sedation

Each tablet contains Mephen-
esin 0.5 gm. Usual dosage is
0.5 gm. for every 50 pounds
of body weight i.e. 150 lb.
adult would take 3 tablets.
Mephenesin is a selective
blocking agent which pro-
duces muscular relaxation. It
is also available in 0.25 gm.
tablets.

SOME ABBREVIATIONS USED IN PRESCRIPTIONS

Abbreviation	Expansion	Meaning
aa	ana	of each
a.c.	ante cibos	before meals
b.i.d.	bis in die	twice a day
c.c.	cum cibos	with meals
ex.aq.	ex aqua	with water or in water
e lact	e lacte	with milk or in milk
h.s.	hora somni	at bedtime
o.d.	omni die	daily
p.c.	post cibos	after meals
p.r.n.	pro re nata	when required
q.i.d.	quater in die	4 times daily
q 3 h	quaque tertia hora	every 3 hours
q 4 h	quaque quarta hora	every 4 hours
q.h.s.	quaque hora somni	every night at bedtime
q.s.	quantum sufficiat	as much as is required
sig.	signetur	let it be labelled
stat.	statim	at once
t.i.d.	ter in die	three times daily

SIGNS AND SYMBOLS

gr.	grain
$\frac{1}{2}$	scruple equivalent to 20 gr.
$\frac{1}{3}$	drachm—equivalent to 60 gr.
$\frac{1}{4}$	Apothecary's ounce—8 drachms or 480 gr.
oz.	Avoirdupois ounce—437.5 grains
fl $\frac{1}{2}$	fluid drachm—approximately 1 tea- spoonful—60 minims
$\frac{1}{16}$	minim (Fluid measure)
fl $\frac{1}{2}$	fluid ounce—8 fluid drachms or 480 minims (but WEIGHS 437.5 grains)
mg.	milligram
G. or Gm.	gram
mil.	millilitre (almost the same as 1 c.c.)
Kg.	Kilogram—1000 grams—approximately 2.2 pounds
l.	Litre

Approximate Equivalents

65 mg.		1 gr.
15 gr.		1 G.
30 G.		1 oz.
2.2 pounds		1 Kg.

217B McVicar St.
Port Arthur, Ontario

Enamel and dentine from incisor and molar teeth of adult male and female Syrian hamsters were analyzed spectrochemically for 34 elements, of which 17 were found consistently in enamel and 16 were found consistently in dentine. Several other elements were found occasionally in the tissues. Calcium and phosphorus were the major constituents, while manganese, sodium, and iron were the only other elements that were above 0.1 per cent. Composition differences were noted for chromium, iron, magnesium, manganese, nickel and silver.

Journal of Dental Research, December, 1955.

Saskatchewan dental services -- Post payment plan

Saskatchewan Dental Services, the first post-payment plan for dental service in Canada under the direct control of the profession, officially went into operation December 1, 1955. Under this plan, the public may pay for dental services on a monthly basis, without interest; a small service charge covering administrative costs of the non-profit organization is shared by the dentist and patient.

Administering the plan is a four-member committee under the chairmanship of Dr. H. S. Locke, Saskatoon, and including Dr. A. E. Chegwin of Regina, Dr. R. E. Dickson of Saskatoon, and Mr. W. E. Jackson of Saskatoon as administrator.

Saskatchewan Dental Services is not a collection agency; rather, it is a party to the dentist-patient relationship. The implied presence of this third party is intended to be a deterrent to non-payment of accounts. Another deterrent is the very fact that the patient must be willing to complete and sign an application and note-form in order to set up his account. In so doing, the patient is indicating his intention to pay; he is also providing the dentist with an opportunity of studying his financial standing; and finally, with the knowledge that the "third party" to the post payment plan is authorized both to get and give credit-ratings, he is aware that non-payment endangers his whole credit standing.

One of the aims of the plan, then, is to place the dentists' accounts on the same solid foundation as those of commercial enterprises, without changing the patient-dentist relationship.

The plan maintains this necessary relationship by the following means:

1. The entire transaction takes place in the dentist's office.

2. Although the central office takes over accounting and collection proceedings, actual payments are made to the dentist by the patient.

3. Legal action is taken by the central office only on the direction of the dentist.

4. The entire plan is kept under the strict control of the profession.

In a society which tends more and more to make use of credit—and to budget on this basis—the post-payment plan is expected to provide the following benefits both to the public and the profession:

1. By providing a convenient method of payment the plan removes the principal cause of neglect of dental health.

2. At the same time, it reduces cost to the patient (delay in necessary services directly increases costs).

3. By helping to eliminate criticism of the cost of dentistry, the operation of the plan makes for improved public relations for the profession.

4. By increasing the demand for dental services, the deferred payment plan cannot help but improve dental health.

5. By allowing the dentist to schedule his operating time on the basis of production rather than of payment, the plan makes for a more efficient use of the dentist's time.

6. The provision of a third-party to the patient-dentist relationship affords a measure of protection against non-payment. Since the non-profit plan is controlled by the profession itself, and the dentist himself contributes to administrative costs, the protection it gives is *not* at the expense of the patient-dentist relationship.

The Saskatchewan Dental Services Post-Payment Plan was presented to the College of Dental Surgeons of Saskatchewan April 23, 1955. The plan was based on the experience of similar operations in Michigan and California. Membership is entirely voluntary.

The establishment of the plan was welcomed editorially by the Saskatoon *Star-Phoenix* which commented: "Its chief value, as the dentists themselves hope, should be to stop people from putting off needed treatment because they lack the money to pay for it immediately. This is a most worthy aim. We commend Saskatchewan Dental Services for introducing the first plan of its kind in Canada."

ABSTRACTS

Prosthodontic Essentials and an Evaluation of the Mandibular Subperiosteal Implant Denture

by ROY L. BODINE, Jr., D.D.S., El Paso, Texas.

The Journal of the American Dental Association, December, 1955.

The implant denture is a new concept which offers a great deal of promise, but has not yet been widely accepted. So far, the results with implant dentures have proved extremely satisfactory. It is a means by which it may be possible to restore artificially, function and appearance approaching that of natural dentition. In this respect, the implant denture may some day revolutionize prosthetic dentistry.

The patient who has struggled with a conventional mandibular denture and then had a successful implant denture will staunchly support the fact that it is many times more comfortable and efficient. The reason for this is that the implant denture transfers the stresses of mastication through the implant abutments directly onto the mandibular bone surface. No pressures are felt on the underlying mucosa. This makes the sensation to the patient of masticating on an implant denture so different from their experiences with an ordinary denture that they find it difficult to suppress their enthusiasm and make a valid comparison. The most common expressions are: "It feels like natural teeth"; "It stays put and never comes loose"; "I can chew as hard as I want and eat anything."

Because of the number of enthusiastic comments such as these, there will be a steady increase in the demand made by patients for implant dentures.

The many mandibular implant dentures currently being made, and the small number that have been in place for from three to five years, has resulted in an immense advancement in design, techniques, knowledge, and experience. In the hands of competent prosthodontists and oral surgeons working together, with experience in implant dentistry, the mandibular implant denture should no longer be considered experimental.

It has a place in modern dentistry for the unfortunate dental cripple who cannot psychologically or physiologically adjust to the ordinary mucosal borne dentures.

The many leading prosthodontists and oral surgeons now interested in implant dentistry will gradually develop, refine and standardize adequate techniques. As qualified and experienced implant prosthodontists and oral surgeons begin to be generally available, it is inevitable that more and more patients who become dissatisfied with the limitations and failures of conventional dentures will request implant denture service.

Does Functional Effort Affect Caries Activity?

by H. H. NEWMANN, M.D. and N. A. DiSALVO, D.D.S., Ph.D.

Journal of Dentistry for Children, Third Quarter 1955.

Although hard crusted old time European peasant bread is a suitable material offering adequate masticatory stress, its appeal to American youngsters, entirely accustomed to effortless ingestion of food, is lacking. In the search for a compromise a specially prepared substance consisting of a resin base, requiring considerable effort in chewing, yet being reminiscent enough of the harder types of chewing gum to be attractive to children, was chosen.

Two hundred and twenty-seven children at ages from three to five were examined in randomly selected nursery schools in New York City. Clinical oral examinations were carried out at the beginning and at the end of the nursery school year for two consecutive years. The advantage of selecting this early age group for a caries study lies firstly in the relatively small number of caries found at the onset of the experiment, and secondly in a generally high caries susceptibility, that is, in a great liability to changes in the caries picture within two years, thereby providing a more suitable index to caries activity than older age groups.

As controls other nursery school chil-

dren in the same age groups, selected again at random, were used. In the evaluation of the findings the estimation of the dmf rate was employed. The results are summarized in table I.

TABLE I

Age in Months	Children in Groups		dmf Average	
	Experimental	Controls	Experimental	Controls
36-47.....	93	84	1.6	1.7
48-59.....	80	80	2.1	2.9
60-71.....	54	90	2.8	4.1
Total.....	227	254		

In spite of the irregularities in the chewing due to absence on week-ends, holidays, vacations and with unsteady attendance of the children, the rate of caries was considerably lower in the hard chewing children.

This difference is probably attributed to the compression under heavier loads on the structure of the teeth, increasing thereby enamel resistance to the attacking agents in the mouth.

The Patient as an Active Participant in Periodontal Treatment

by GEORGE J. WHINSTON, D.D.S., New York, N.Y.

The New York Journal of Dentistry, January, 1956.

A re-emphasis of the significance of home care procedures in the treatment of periodontal disturbances seems particularly indicated at this time. Whether the approach in therapy is along conservative

lines, or whether surgical procedures are primarily employed, there is a definite need to maintain the results achieved. Also, it must not be overlooked that faulty oral sanitation is one of the principal

etiologic factors in periodontal disease.

The most efficient method for demonstrating the procedures required for good oral sanitation consists of:

1) Have the patient demonstrate his usual method of brushing. In this manner, the deficiencies and errors may be clearly pointed out. It is wise to associate the methods used with the existing periodontal disturbances.

2) Demonstrate on a model of the patient's own teeth the new procedures prescribed. This step will enable the dentist to point out the variations necessitated by the particular oral conditions found.

3) Demonstrate the procedures in the patient's mouth, utilizing a hand mirror. At first, the methods should be shown in the anterior segments of upper and lower arches. After the patient understands

the various strokes and movements required, all other areas, in proper sequence, should be demonstrated. This step will allow the patient to actually feel the amount of pressure and stimulation recommended.

4) Guide the patient in the application of the procedures just demonstrated.

The patient should be checked on all procedures at each subsequent visit. It is most important that the dentist provide encouragement during the period of retraining. The patient should be reassured that the methods will gradually become easier to apply. The amount of time necessary for these procedures will be decreased as the patient becomes more adept. It should be made clear to the patient that the procedures prescribed must be carried out every day, even after active periodontal treatment has been terminated.

Locating Impacted Cuspids

by GEORGE E. EWAN, D.D.S., M.S., Sheridan, Wyo.

American Journal of Orthodontics, December, 1955

In making x-ray views of an impacted tooth and its adjacent structures to be used in the shift technique, we change the position of the x-ray tube so that we view the same structures from three diverse positions. This gives us pictures of the related structures from three contrary points of view. Always the more distant object will appear to move in the same direction that we move as we view the pictures.

The shift technique may be outlined as follows:

1) Three views of the same area are made from three positions; one from the mesial, one straight forward toward the area (standard view), and the third from a distal position. These films are labeled and kept separate during developing.

2) The films are mounted and labeled "mesial," "straight," and "distal." They are viewed from the labial or buccal side.

3) The impacted tooth or foreign body will have a distinct relationship with its adjacent structures in each of the three views, due to the repositioning of the x-ray tube for each view.

4) The object which appears to have moved in the same direction that the x-ray tube was moved is the deeper object or is lingual to the adjacent structures.

While there still remains the decision as to what to do with an impacted tooth, certainly the first step in reaching that decision must be to locate it definitely in relation to the surrounding area. Then, and only then, can a sound decision concerning its disposition be made.

Field Training in Public Health for Undergraduate Dental Students

by D. M. HADJIMARKOS, D.D.S., M.P.H., F.A.P.H.A., Portland.

Journal of Dental Education, November, 1955.

The field training program in Public Health is designed to give the dental student practical "clinical" experience in an important area of dental public health, namely, the making of surveys among population groups. He is given the opportunity to put into action, under supervision, the knowledge acquired through the lectures in the classroom on the methodology of planning and executing dental surveys by personally participating in an actual case. It is felt that the experience gained through such a procedure will enable the student to better discharge his professional and social responsibilities to his community as a practitioner by providing effective leadership toward the development of a dental health program.

The undertaking of a survey among the population involved is considered an es-

sential prerequisite for the establishment of a successful community-wide dental health program. The development of community health programs as a means of improving the oral health of the people is requisite. Despite this, however, much remains to be done in this field. There are indications that some of the difficulties encountered in the attainment of this goal are derived from lack of understanding and knowledge on the part of local dentists in the basic objectives and practices of dental public health.

In addition to the above, the results of the dental surveys executed by the students may well serve another purpose. That is, the findings of the surveys may be publicized through the local newspapers thus arousing community interest in the solution of problems regarding the dental health status of children.

The Diagnosis and Correction of Functional Malocclusion

by BLAIR C. MADSEN, D.D.S., Miami, Florida.

The New York Journal of Dentistry, January, 1956

Many patients with evidence of periodontal disorder, abrasion, or discomfort in the anterior segment of the mouth have these conditions incorrectly diagnosed and treated as reduced vertical dimension. A functional analysis of the patient's occlusion may reveal that the normal arc of closure is altered by premature contacts, causing a protrusive thrust of the mandible, forcing the patient to function in an eccentric position. When this malfunction is corrected by occlusal equilibration and by providing posterior balancing support in protrusive excursion,

all traumatic factors can be eliminated. In many cases there is no need for increasing the vertical dimension by means of occlusal reconstruction, bite plates, or splints.

Radiographic and clinical evidence of continued improvement, and of the restoration of the structures supporting the incisor teeth to a state of health can be demonstrated. The technique is in harmony with basic fundamentals and can be applied with a minimum of surgical intervention, expense, and consumption of time.

Early Dentinal and Pulpal Changes Following Cavity Preparations and Filling Materials in Dogs.

by VERDA ELIZABETH JAMES, D.D.S., and ISAAC SCHOUR, D.D.S., Ph.D., Chicago, Illinois.

Oral Surgery, Oral Medicine and Oral Pathology, December, 1955.

A histologic study was made of the pulpal response to eight different filling materials placed in cavities prepared by bur and by airbrasive in 116 cuspid teeth of forty-two young adult dogs. The survival periods were one, two, and three weeks. No significant differences were observed following cavities prepared by bur and those prepared by airbrasive.

The findings were evaluated in terms of pulpal inflammation (mild, moderate, and severe) and of the effects of the odontoblasts as reflected in the quality and quantity of postoperative dentine. Three types of responses could be recognized in the dentine: (A) normal; (B) increased dentine formation; and (C) dentinal hypoplasia (pathologic). Types A and B represented a productive response, and Type C a pathologic response. It was found that the severity of the in-

flammatory response in the pulp increased with cavity depth.

When the filling materials were arranged in terms of the inflammatory response, it was found that they fell into two groups. Group A consisted of zinc oxide and eugenol, calcium hydroxide, and amalgam, and was characterized by the presence of only mild inflammation, even in deep cavities, and the absence of dentine hypoplasia.

Group B, consisting of gutta-percha, acrylic, zinc oxyphosphate cement, silicate, and gold foil, showed a few instances of moderate inflammation, even in shallow cavities, and a number of instances of moderate or severe inflammation in the deeper cavities. Dentinal hypoplasia occurred in 11 to 38 per cent of the cases in this group.

Effects of Smoking on the Oral Mucosa.

by A. BUDNER LEWIS, A.B., D.M.D., Providence, R.I.

Oral Surgery, Oral Medicine, and Oral Pathology, October, 1955.

A clinical variance can occur when the oral mucous membrane is irritated by the by-products of smoking. All leukoplakia type lesions can be considered part of a keratotic process. The keratosis can be a mild, innocent-looking, whitish gray plaque, or it can appear clinically as an advanced, verrucous, papillomatous precancerous lesion. The intensity of the keratotic response to the irritating stimulus of smoking seems directly proportional to the susceptibility of the patient. The tissue changes in the susceptible person are also directly proportional to the

amount of tobacco consumed, regardless of the form or method of use.

The microscopic examination of the lesion is the essential means to making a differential diagnosis. The gross appearance of the tissue does not furnish adequate criteria, and simple grading of the lesion by a clinical examination does not seem positive enough, since there is too much of a variance in their gross appearance. Somewhat simple-looking white plaques have proved premalignant or malignant after prolonged clinical observation, whereas advanced-appearing

lesions have been made to disappear by simply removing the irritating or traumatizing factors. There seems a need for reclassifying these lesions clinically, as well as pathologically.

Actually, there is a generalized agreement in the literature that keratoses in the oral mucosa appear following constant irritation or traumatization. Leukoplakia, the derivation of which means

"white patch", seems like an excellent generalized term. Descriptive terms of this white patch, such as flat, raised, fissured, verrucous, papillomatous, ulcerated, eroded, etc., also seem adequate. The grading and classification of the lesion, however, should be done only after microscopic examination.

If a person is susceptible to keratosis, excessive smoking should be avoided.

Further Observations on the Effect of Tobacco on Epithelial Tissues of Vitamin-deficient Mice

by SEYMOUR J. KRESHOVER.

Journal of Dental Research, December, 1955.

By means of an apparatus designed to make applications of whole tobacco smoke to selected tissue sites, and on the basis of observations made on 201 Swiss strain mice divided into various control and vitamin-deficient categories, the following summary may be made.

1) Vitamin B complex deficiency in mice renders their cutaneous tissues more susceptible to the irritating effects of whole tobacco smoke. This confirms findings made in a previous report.

2) Riboflavin, pyridoxine, and pantothenic acid are the B complex components primarily responsible for such alterations in tissue response.

3) Animals maintained on diets deficient in biotin, thiamine, and nicotinic acid show no greater tissue susceptibility to tobacco smoke applications than do mice on a normal adequate diet. These observations are explainable, in part, by the demonstrated resistance of mice to niacin deficiency, and by the fact that thiamine deficiency is manifested principally in noncutaneous tissues.

4) Gonadectomy renders cutaneous tissues less susceptible to the irritating effects of whole tobacco smoke.

5) Tissue response, under the conditions of the present study, is not influenced by sex.

6) The described cutaneous lesions are in striking contrast to the previously reported absence of pathologic change in oral tissues subjected to similar applications of whole tobacco smoke. This suggests either a basic difference in response by different tissues or a protective effect by the tongue and saliva in readily removing deposited tars.

7) The predominating feature of tissue response to whole tobacco smoke is a proliferative change characterized by hyperkeratosis, hyperplasia, acanthosis, and chronic inflammation of the corium. Cellular alterations in size, shape, and staining qualities as well as loss of basal-cell polarity and increased mitotic activity indicate the abnormal nature of the tissue change.

8) There is no evidence of an acquired capacity of the tissues for continued proliferative change after terminating exposures to the tobacco smoke.

9) Vitamin B complex-deficient hamsters, currently under study, show no significant cutaneous tissue changes even after receiving twice as many smoke applications as did the mice. This indicates the questionable validity of making conclusions on the basis of experiments with a single species of laboratory animal, and the speculation involved in applying such findings to man.

Blood Loss during Operation for Multiple Extraction with Alveoloplasty and other Oral Surgical Procedures.

by ROBERT J. GORES, D.D.S., R. QUENTIN ROYER, D.D.S., and FRANK D. MANN, M.D., Rochester, Minn.

Journal of Oral Surgery, October, 1955.

Blood loss was measured in 50 patients in whom oral surgical procedures were performed. In 47 patients, the operation was multiple extraction and alveoloplasty; in three, it was more extensive. The magnitude of the blood loss approximated that of general surgical procedures such as gastric resection.

All patients received general anaesthesia. In 21 of these patients, the soft tissues

in the region of the operation were infiltrated with a local anaesthetic solution which contained a vasoconstrictor drug. The 26 patients who did not receive the local anaesthetic were considered as controls. When operations of equal severity were compared, it was found that use of the vasoconstrictor decidedly diminished blood loss. The corresponding increase in dryness of the operating field, however, did not reduce average operating time.

Comparison of Balanced and Nonbalanced Occlusion of Artificial Dentures. Based upon distribution of Masticatory Force.

by ARTHUR R. FRECHETTE, Captain (DC) U.S.N.

The Journal of Prosthetic Dentistry, November, 1955.

Recordings were made of pressures imparted to subjacent tissues by balanced and nonbalanced dentures during chewing. Analysis of these records indicated that denture stability and force distribution were more favorable during bilateral chewing than during unilateral chewing on either side. It was found that pressures at the ridge crest of the working side increased 50 to 200 per cent during unilateral chewing. At the same time, the number of positive pressure strokes at the ridge crest of the balancing side decreased 25 to 80 per cent. Although it is doubted that many denture wearers

regularly limit their chewing to one side alone, it would seem advisable for them to deliberately spread food across both food tables to obtain maximum stability and to prevent overloading of localized areas of the ridges.

In the studies conducted, the advantages of balanced occlusion did not appear to be established. The recordings indicated that bilateral chewing contributed much more to denture stability than did balanced occlusion. Obviously, many more studies must be conducted before the relative merits of balanced and nonbalanced occlusions can be evaluated with accuracy.

The term research is itself a source of confusion. Research means simply a careful systematic or diligent search for facts or principles. It comes from an old French expression meaning "to seek again." In general and proper usage, one finds library research, historical research, legal research, industrial research, clinical research, and scientific research. Scientific is no more a necessary adjective for research than damn is for Yankee! Scientific and basic research are special restrictions of the general term.

Ward Pigman, "Wanted: More Ivory Towers"
Journal of Oral Surgery, October, 1955.

HOSPITAL DENTAL SERVICES

The establishment of a dental service in a hospital must be conceived at the local level. The local medical and dental groups working in harmony can show the hospital authorities and citizens the need for a comprehensive health service, which as such, must include dental treatment.

The first appointment to the hospital staff should be the head of the department, (or in small hospitals the dental consultant); he should be ethical, capable and have the confidence of his associates. The department should be a separate entity and responsible directly to the Chief of Surgery. Also, the head of the department must be on an equal status with the heads of other surgical specialties, or otherwise the department will never possess autonomy. Each such department should be staffed by men whose training permits them to render a complete and comprehensive dental service to both out and in-patients.

In using hospital facilities one must remember that all dental patients cannot be admitted for operative procedures. Reasons for admission should include the patient's general health, an adequate pre-operative evaluation, the severity of the procedure contemplated, his tolerance to anaesthetics, anticipated post-operative complications, and for concurrent medical treatment. To admit patients only because they wish to be hospitalized is most certainly abusing one's privileges.

Also, in utilizing hospital facilities one must remember to make full use of them. These include the x-ray, haematological, pathological, bacteriological and

biochemical services, and more especially the consultation services offered by other medical departments. It is not our intention to discuss the interpretation of such reports and consultations, but suffice it to say that it is your responsibility to recognize abnormal findings and then consult with the proper authorities.

Consider then the dental problems for which the original admission was made. Whether it be some minor or major oral surgical procedure, a diagnostic problem, or for the purpose of doing operative dentistry under general anaesthesia, it is the manner in which it is performed, and the results thereby obtained that will make or break the reputation of hospital dentistry. Remember that regardless of your position in the hospital, you should not attempt any procedure that is outside the realm of dentistry, and more especially, one with which you are not completely familiar. If in question, firstly call in one of your own dental specialists. If there is still a doubt, then rely upon a medical consultation. Failure to observe this procedure will show an extreme lack of judgement and foresight, and serve to promote disunity.

Perhaps the most important service that we can render hospitalized patients is that given through an in-patient dental clinic. Whether they are acute or chronically ill, indigent or private patients, it is here that they can avail themselves of our services. The clinic should include facilities and personnel for emergency and operative dentistry, oral diagnosis and x-ray examinations, exodontia and other oral surgical procedures, and

(Continued on Page 102)



ANNUAL CONVENTION
THE CANADIAN DENTAL ASSOCIATION
ALBERTA DENTAL ASSOCIATION
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DR. ARNEF ROMNES:

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DR. H. M. WORTH:

Noted Canadian authority on Radiology, Vancouver, B.C.

DR. SIDNEY T. WILLIAMS:

Prosthetic Dentistry, University of Washington, St. Louis, Mo.

EDITORIAL

The Journal—The Window of the Profession

The School, the Association, and the Journal, have long been recognized as the foundation of a particular profession. Just as a stool gives way and tumbles to the ground when one of its supports is removed, likewise a profession is dependent upon its triad for its stature and recognition.

Dental education in Canada has made exceptional progress—not perhaps in accommodation of greater numbers of students—but in the quality of instruction being offered. A dedicated group of individuals, building upon the educational experiences and attainments of those who have gone before, are at present providing courses in dental and related subjects of a high professional calibre.

The Canadian Dental Association from rather small beginnings only a relatively few short years ago, is at present serving the profession in multifarious capacities. The untold number of hours spent by those elected or appointed to the various boards, committees, and councils, represent a significant contribution to the professional standing of Canadian dentistry.

Sharing these responsibilities is the Journal, without which the efforts of the other two might well go unnoticed or unappreciated. The Journal provides the best means of professional communication both for the dissemination of scientific literature and the provision of information pertinent to all other phases of professional consideration.

At best, a clinician is able to reach only a relatively small percentage of the total membership of a profession when he

presents his material before audiences at meetings or conventions. While these clinics are the virtual life blood of professional gatherings, it does not preclude the desirability of extending the benefits of the presentations to the vast majority not in attendance. The Journal provides a potential audience of the entire membership, and in fact, because of its circulation throughout the world, is able to be made available for any interested individual no matter where he should reside.

This latter possibility should not be taken lightly. The professional stature of any group must in the main be judged by others on the basis of written communication. Professional status is not enhanced in any country wherein the members do not provide continual contributions to the knowledge relating to the profession.

The provision of suitable material for Journal publication should not be a spasmodic consideration. Any journal wishes to be able to present a balance of material to its readership. Such a balance is not possible, if there is a lack of acceptable articles for publication.

Strangely, it is a fact that many practitioners believe there is available a supply of articles which rises much like a mountain stream and flows on for time immemorial. Scientific articles do not develop in that fashion. Papers are presented because concerned and conscientious individuals write them. They represent an expenditure of time and energy and are offered without cost to any per-

son sufficiently interested to read them.

Quite frankly, there is a dearth of material in Canada suitable for Journal publication and this lack presents a serious professional concern which should receive the earnest consideration of all enlightened practitioners.

There are ways by which this difficulty could be overcome. While one hesitates to add to the time-consuming responsibilities of those engaged in rendering instruction in our dental schools, the fact remains that these members are in an ideal position to make significant contributions to the literature. Good papers, well prepared, reflect favourably upon the institutions from whence they come.

Many clinical presentations are made to the various society meetings and con-

ventions which take place every year. A little added effort, by the clinician, will make available in written form, a presentation originally developed for oral delivery. Some societies actively encourage their clinicians to prepare such papers, while others, to date, have not been too concerned.

The development of the professional literature in this country is not the responsibility of the editor alone but is a professional obligation of each practitioner. One may hope that sufficient interest and concern are engendered to enable a continuous supply of suitable material to be provided. Knowledge in a profession is not self-limiting and therefore its literature should mirror such a concept.

Book Reviews

Oxygen Insufflation in Periodontal Diseases.

By Harold K. Box, D.D.S., Ph.D. Printed by: The Ryerson Press. 1st Edition. Pages: 94. Price: \$3.75.

This book by Doctor Harold K. Box, presents his classification of periodontal disease, correlated with a careful and detailed description of the clinical and pathological pictures presented by these entities. This is supplemented with some excellent photomicrographs which illustrate the cellular changes which take place in the periodontal tissues.

Doctor Box follows with his interpretation of these cellular changes. He calls this his working hypothesis.

There is a section on dental calculus, its formation, attachment to the tooth, calcification and significance.

Chapter two deals with Etiology and Therapy of periodontal disease and is presented in chart form.

The remainder of the book is devoted to oxygen therapy and deals in detail with the technique of using oxygen insufflation and the place of oxygen in case management planning for Simplex, Complex, and Necrotic Periodontitis.

The final chapter of the book deals with some of Doctor Box's original experiments using oxygen insufflation on sheep.

Throughout the book in smaller print at the bottom of many of the pages are numerous explanations, or associated information from other sources, which help to clarify or support the opinions expressed by the author.

This book by one of the outstanding dentists of our time, is thoroughly readable and is especially to be appreciated for its clear, concise approach, and its excellent photomicrography.

It is recommended to the periodontist, the general practitioner, and the student.

John E. Speck.

A Complete Fixed Bridge Procedure. By David H. Coelho and Julian M. Rieser. Published by New York University Press. 2nd Edition. Pages: 140. Price: \$3.75.

This year's edition by these teachers of fixed partial prosthesis at the New York University College of Dentistry, is actually a revised edition of their previously successful text book.

As with most modern works dealing with this particular subject, the first chapter is devoted entirely to treatment planning and this is extremely well done. Here as throughout this treatise, simplicity is stressed. The authors have been careful not to stray into any unnecessary discussions which might tend to confuse, and eventually lose the interest of the reader.

The entire book is profusely illustrated, and embellished with many helpful suggestions not heretofore encountered by this reviewer.

While the latest techniques of fixed bridge construction are dealt with in intimate detail, older basic techniques have not been neglected or ignored. The use of diamond points and stones and of carbide burs has been mentioned, but no suggestion as to the rate of speed of their use has been indicated. Nor is the use of a water spray and moist field suggested. Improper use of the above mentioned factors could, of course, result in damaged pulps of the teeth being prepared.

The text closes with a very fine chapter on the causes of failure of the fixed partial appliance.

W. D. Cavanagh

The Library

The Library of the Association consists of practically all the books related to dentistry which have been published during the last ten years. A considerable number of volumes published earlier are also available.

The Library has been made possible through the generosity of interested members of the Association. All monies received are used for the purchase of books. The Association bears the cost of administration.

For the benefit of members and all others interested, the library is open daily from 9.00 a.m. to 5.00 p.m. except Saturdays and Sundays. All dental periodicals are available.

Books may be borrowed by the membership by writing: Librarian, Canadian Dental Association, 234 St. George St., Toronto.

Additions

BRANDETSAS, J.: *The dental educator*. 1955. 49 pp. illus.

CULLEN, S. C.: *Anesthesia in general practice*. 4th ed. 1954. 313 pp. illus.

SHANE, S. M., and ASHMAN, H.: *A method of balanced anesthesia in general surgery, obstetrics, and dentistry*. 1955. 53 pp. illus.

WELSH, A. L.: *Differential diagnosis of leukoplakia, leukokeratosis and cancer in the mouth*. 1955. 62 pp.

HOSPITAL DENTAL SERVICES *(Continued from Page 98)*

certainly in larger centres, facilities for orthodontics and periodontics. Obviously such a clinic would have a small beginning. However, only when its usefulness is recognized by hospital and medical authorities will there be an opportunity for gradual enlargement.

Again, it is most desirable that such a clinic provide facilities for dental outpatients. These should include social service cases, old age pensioners and other indigents who, due to circum-

stances, are unable to obtain this treatment privately. Such a clinic should also be prepared to give comprehensive care to such problems as cleft lip and palate cases, central nervous system disorders and any other problems which require the combined talents of many dental and medical specialties. At no time should the clinic treat patients who are financially able to obtain this treatment on a private basis. Keith Lindsay, D.D.S.

Vancouver, B. C.

The Association

Canadian Dentists as Taxpayers for 1953

The Department of National Revenue issues each year a publication entitled "Taxation Statistics". The 1955 issue sets forth statistics based on the taxes paid for the year 1953. These published figures are of more than ordinary interest in that the Survey of Dental Practice as conducted by the Canadian Dental Association was for the same year.

The following table, as published by the department, shows the average net income of dentists for the year (1953) to be \$7,485. The Canadian Dental Association Survey of Dental Practice for this same year established the average net income for Canadian dentists at \$7,541. The two figures are approximate.

As will be observed, the order in the accompanying table is arranged according to average income.

Statistics of General Interest

Canadian Taxpayers By Occupation—1953

OCCUPATION (Arranged in Order of Average Income)	NUMBER	INCOME			TAX		
		Average Income	Total Income (In Millions)	Per Cent of Grand Total	Average Tax	Total Tax (In Millions)	Per Cent of Grand Total
Medical Doctors and Surgeons.....	10,140	\$11,258	\$ 114.2	1.00%	\$ 2,572	\$ 26.1	2.27%
Consulting Engineers and Architects.....	2,150	10,289	22.1	0.19	2,512	5.4	0.47
Lawyers and Notaries.....	5,390	9,955	53.7	0.47	2,280	12.3	1.07
Accountants.....	2,630	8,096	21.3	0.19	1,540	4.1	0.36
Dentists.....	4,460	7,485	33.4	0.29	1,202	5.4	0.47
Estates.....	5,220	6,019	31.4	0.27	545	2.9	0.25
Investors.....	62,730	5,948	370.2	3.23	1,061	66.0	5.75
Osteopaths and Chiropractors.....	1,440	5,539	8.0	0.07	770	1.1	0.10
Business Proprietors.....	167,250	5,125	857.2	7.48	763	127.6	11.12
Salesmen.....	39,700	4,665	185.6	1.62	566	22.5	1.96
Forestry Operators.....	1,720	4,626	8.0	0.07	657	1.1	0.10
Other Professionals.....	2,720	4,580	12.5	0.11	596	1.6	0.14
Entertainers.....	1,990	4,254	8.4	0.07	536	1.1	0.10
Deceased.....	7,360	4,183	30.8	0.27	475	3.5	0.31
Farmers.....	69,200	3,869	267.7	2.33	341	23.6	2.06
Fishermen.....	3,470	3,703	12.8	0.11	357	1.2	0.10
Employees.....	2,988,730	3,143	9,392.4	81.91	281	839.1	73.14
Pensioners.....	9,110	3,040	27.7	0.24	221	2.0	0.17
Unclassified.....	810	2,899	2.3	0.02	258	0.2	0.02
Nurses.....	3,720	1,883	7.0	0.06	129	0.5	0.04
Grand Total.....	3,389,530	\$ 3,383	\$11,466.7	100.00%	\$ 338	\$ 1,147.3	100.00%
Employees Sub-Divided as follows:							
Municipal Governments.....	86,100	\$ 3,197	\$ 275.3	2.40	\$ 221	\$ 19.0	1.66
Business Enterprises.....	2,510,090	3,182	7,986.6	69.65	291	730.2	63.65
Educational Institutions.....	67,760	3,160	214.1	1.87	292	19.8	1.72
Provincial Governments.....	92,910	3,055	283.8	2.48	243	22.6	1.97
Federal Government.....	135,140	3,049	412.1	3.59	231	31.2	2.72
All Others.....	20,020	2,572	51.5	0.45	188	3.8	0.33
Institutions.....	71,610	2,231	159.7	1.39	168	12.0	1.05
Agricultural Enterprises.....	3,510	1,854	6.5	0.06	110	0.4	0.03
Private Individuals.....	1,590	1,784	2.8	0.02	99	0.1	0.01
Total Employees.....	2,988,730	\$ 3,143	\$ 9,392.4	81.91%	\$ 281	\$ 839.1	73.14%

CHART I

ESTIMATED NUMBER OF PERSONS REPORTING VARIOUS CLASSES OF HEALTH CARE

(SOURCE: TABLE 1A)

PERSONS REPORTING



PHYSICIANS' SERVICES



IN - PATIENT HOSPITAL CARE



HOME NURSING CARE



OPERATIONS



DENTAL CARE



EXAMINATIONS FOR GLASSES



MISCELLANEOUS HEALTH CARE



EACH FIGURE REPRESENTS 100,000 PERSONS REPORTING

Canadian Sickness Survey 1950-51

Bulletin No. 8 of the Canadian Sickness Survey has now been published and contains interesting references to dental health services. Certain charts and a table contained in this publication are re-produced.

The Canadian Sickness Survey has been referred to as the most comprehensive effort of this character ever undertaken in the world. It is a survey of consumers of health services. "The survey method consisted of personal visits by trained lay enumerators to a sample of approximately 10,000 households distributed throughout each of the 10 provinces in metropolitan, small urban and rural

areas. Less than 5% of these households refused to participate in the survey. Of the remaining household over 80% of the individuals involved remained in the sample throughout the survey period." The information obtained covered a 12 month period.

Chart 1 indicates number of persons reporting various classes of health care during the survey year. "The category of health care received by the largest number of persons was physicians' care, reported by 43.2 per cent of the population. Next came dental care, reported by 14.7 per cent (treatment received at school dental clinics was excluded), and in-patient hospital care, reported by 10.2 per cent of the population."

TABLE 17. Dental Care during Survey Year
Estimates of persons reporting dental care and of dental visits reported, by age and sex

Age-sex group	Population (millions)	Persons reporting dental care			Dental visits reported			
		Number (millions)	As percentage of total persons reporting (by sex) (c) ¹	As percentage of total persons in age-sex group (d) ²	Number (millions)	As percentage of total number reported (by sex) (f) ³	Rate per 1,000 persons	
							In population (g) ⁴	Reporting (h) ⁵
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	
Both sexes								
All ages	13.54	2.00	100.0	14.7	4.37	100.0	323	2,191
Under 15	4.12	0.56	28.3	13.7	1.10	25.2	268	1,952
15-24	2.05	0.43	21.5	20.9	1.09	24.9	530	2,535
25-44	3.90	0.70	35.3	18.0	1.55	35.4	396	2,196
45-64	2.42	0.26	12.8	10.5	0.58	12.7	239	2,174
65 and over	1.05	0.04	2.1	4.0	0.08	1.9	77	1,936
Male								
All ages	6.82	0.88	100.0	13.0	1.80	100.0	264	2,040
Under 15	2.10	0.28	31.4	13.2	0.52	29.1	250	1,890
15-24	1.01	0.18	20.5	18.0	0.43	23.9	427	2,373
25-44	1.93	0.28	31.3	14.3	0.56	31.1	290	2,027
45-64	1.25	0.12	13.8	9.8	0.24	13.2	191	1,953
65 and over	0.53	..	..	..	..	..	..	..
Female								
All ages	6.72	1.11	100.0	16.5	2.57	100.0	383	2,312
Under 15	2.02	0.29	25.8	14.2	0.58	22.4	286	2,013
15-24	1.04	0.25	22.3	23.7	0.66	25.6	630	2,655
25-44	1.97	0.43	38.5	21.7	0.99	38.3	500	2,305
45-64	1.17	0.13	12.1	11.5	0.32	12.4	272	2,375
65 and over	0.52	..	..	..	..	..	..	..

1. Derived from column (b): each age group as percentage of "all ages", by sex.
2. Column (b) as percentage of column (a).
3. Derived from column (e): each age group as percentage of "all ages", by sex.
4. Column (e) divided by one thousandth of column (a).
5. Column (e) divided by one thousandth of column (b).

Dental Care

"About 2,000,000 persons, or one in every seven of the population (14.7 per cent) reported dental care during the survey year (excluding care given at

school dental clinics). The 15-24 year age group had the highest proportion of persons reporting dental care (20.9 per cent). The proportion reporting dental care was successively lower for older age groups

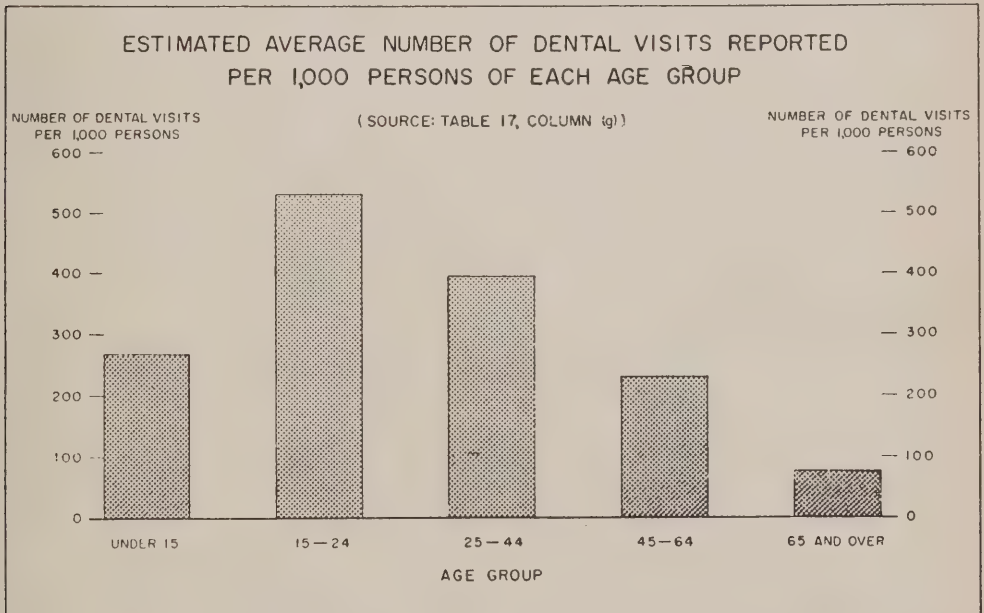
and amounted only to 4.0 per cent of persons 65 and over. Dental care was reported by 13.0 per cent of males and by 16.5 per cent of females. The proportion of females reporting dental care was higher than the proportion of males in all age groups under 65.

"The number of dental visits reported during the survey year was about 4,370,000, or 323 per 1,000 persons of the population. The 15-24 year age group reported proportionately the largest number of dental visits (530 per 1,000 persons) and the 65 and over age group the smallest number (77 per 1,000 persons). Females reported proportionately more dental

visits than males in all age groups under 65. The total average for males was 264 dental visits per 1,000 persons and for females 383 dental visits per 1,000 persons.

"A large number of persons reporting dental care reported more than one dental visit: there were 2,191 visits for every 1,000 persons reporting dental care. Multiple dental visits were reported most frequently in the 15-24 year age group (2,535 visits per 1,000 persons reporting). Multiple visits were reported more frequently by females (2,312 visits per 1,000 persons reporting) than by males (2,040 visits per 1,000 persons reporting)."

CHART - 7



Ontario Announces Health Insurance Commission

Premier Frost stated on December 23rd that the Ontario Government is proceeding to set up a health insurance commis-

sion on a similar basis to the present Hydro Commission. It is presumed that legislation for this purpose will be introduced at the forthcoming session of the legislature.

Death Cause of Dentists

The Bureau of Economic Research and Statistics, American Dental Association has published a study of the age and cause of death of 3,576 white male dentists who died during 1951-1954. The mean age at death is stated to be 67.5 years. The causes of death are presented in the following percentages:

Diseases of the Circulatory System	54.89%
(of which 50.42 are disease of the heart)	
Neoplasms	16.22%
Disease of the Nervous System and Sense Organs	10.40%
Accidents, Poisonings and Violence	5.01%
Suicide	2.04%
Homicide	.06%
Diseases of Digestive System	3.66%
Diseases of Respiratory System	2.74%
Disease of Genito-Urinary System	2.27%
Allergic, Endocrine System, Metabolic and Nutritional Diseases	1.90%
Infective and Parasitic Diseases	1.09%
Symptoms, Senility and Ill-defined Conditions	.90%
Mental, Psychoneurotic and Personality Disorders	.28%
Disease of the Blood and Blood Forming Organs	.22%
Diseases of the Bones and Organs of Movement	.20%
Congenital Malformations	.14%
Diseases of the Skin and Cellular Tissue	.08%

C.D.A. Plan Special Dental Students' Insurance

The Canadian Dental Association has arranged a particularly low cost insurance plan enabling Dental Students to protect themselves and those financially interested in their education during the final two years of their studies and up to the first three years of practice after graduation.

This Dental Students' Plan also enables Students to insure their insurability for the C.D.A. Pension-Assurance Plan proper when they have adequate professional income: Conversion of this preliminary plan to permanent plans will be given at any time within three years after graduation *without medical examination* or other evidence of insurability.

Essential features of the Dental Students' Plan are:

1. All students in the last two years are eligible for \$15,500 of insurance *without evidence of insurability*, subject to 75% participation.

2. Applications for up to \$25,000.00 as well as Students in *earlier years* will be individually accepted subject to evidence of health.

3. Maximum entrance age 30.

4. Coverage is effective throughout remainder of undergraduate period and for the first three years of practice after graduation.

5. Minimum policy is \$5,000.00. Maximum \$25,000.00.

6. Premium rate is \$3.25 per thousand dollars of insurance, plus 50c for Total Disability Waiver of Premium, which must be included. Premium is the same for all ages and level throughout whole period of coverage (5 years).

7. Once issued, each individual may continue his own contract regardless of percentage of participation later.

8. The Dental Students' Plan is fully convertible to the permanent coverages available to Members of the C.D.A. without evidence of insurability: A particular advantage in view of the extremely low rates of the permanent coverages. (See "Journal of the C.D.A.," January, 1954, Page 32).

Applications should be sent to:—

The Canadian Dental Association,
Plan Administration Office,
P.O. Box 70,
Brockville,
Ontario.

Students should consult the "Journal of the C.D.A.," "Economic Security" Department for information on the various phases of the C.D.A. Plan and general matters of economic security in dental practice.

Dr. H. B. Fleming New Member of Board

At the Annual Meeting of the New Brunswick Dental Society October 30th last, Dr. H. B. Fleming of Moncton, N.B., was elected to the Canadian Dental Association Board of Governors. He succeeds Past President A. J. Coughlan who has represented the Province of New Brunswick on the Board since 1948. Dr. Fleming graduated from McGill University in 1949 and has practised at Moncton since graduation. He was born and received his early education at Moncton.

Banff Meeting

Advance registration forms for the Banff Meeting have now been mailed out to the membership. All those intending to attend the meeting should complete the required information and return as promptly as possible. Hotel reservations will be allotted in the order of receipt of returned application. Information respecting train reservations from Eastern points was published in the November issue of the Journal page 635.

Reduced Railway Fares for Banff Meeting

The Canadian Passenger Association has authorized reduced fares for persons attending the Annual Meeting of the Canadian Dental Association in Banff.

Authorized dates for the start of the going journey will be as follows:—

From stations on Western Lines—all points Port Arthur, and Armstrong, Ont., and west—May 25th to June 4th, inclusive, 1956.

From stations on Eastern Lines—all points east of Port Arthur and Armstrong, Ont., not including Newfoundland—May 23rd to June 3rd, inclusive, 1956.

From Newfoundland—May 21st to June 1st, inclusive, 1956.

The return limit is thirty days after the date on which the ticket is valid to start the going journey. Return trip may commence on any date within final return limit, and passenger must reach original starting point not later than midnight of final return limit.

Round trip tickets will be sold to persons attending the meeting upon presentation of an Identification Certificate, which is issued by the Secretary of the Canadian Dental Association.

All those desiring Identification Certificates will please request same by writing:—

The Secretary,
Canadian Dental Association,
234 St. George Street,
Toronto, Ont.

12th International Dental Congress

Circulars will reach members shortly respecting travel plans for attending the 12th International Dental Congress to be held in Rome September 7-14, 1957. Thos. Cook and Sons have been appointed travel agents for the Congress and accommodation may be arranged through this firm. Members intending to attend the Congress are advised to make reservations early in order to be assured of hotel accommodation. An allotment of rooms is held by Thos. Cook and Sons. Advance indications are that the attendance will be large. The Italian Medical Dental Association will be host to the meeting, which will be held under the patronage of the President of the Italian Republic, Dr. Giovanni Gronchi. Preliminary plans have now been completed for the Congress.

Survey of Dental Schools

The survey team of the Council on Dental Education visited the Faculty of Dentistry, University of Alberta, October 31st-November 2nd and the Faculty of Dentistry, University of Montreal, November 28th-30th. Dates for visitations at the other schools are as follows:

Faculty of Dentistry, McGill University
—January 23rd-25th.

Faculty of Dentistry, University of Toronto—February 20th-22nd.

Faculty of Dentistry, Dalhousie University—March 5th-7th.

Short Issues of Journal

A shortage of the January 1955 and May 1955 issues of the Journal of the Canadian Dental Association has occurred. In order to supply requests for these issues, it will be appreciated if members having no further use for them will forward their copies to:

Canadian Dental Association,
234 St. George Street,
Toronto 5, Canada.

Premier Smallwood Announces Free Health Services

On December 22nd Premier Smallwood announced that his government intends to institute a scheme providing for medical, dental and eye care for every Newfoundland child up to the age of 16 years. He stated that this would constitute the most comprehensive social health service plan in Canadian history and the necessary legislation would be enacted at the forthcoming session of the legislature. To accomplish this, the Premier said, it will be necessary to import physicians, dentists and nurses from "England, Scotland, Ireland and Europe".

Mr. Smallwood termed the free dental care the "third greatest" social benefit scheme to come to Newfoundland. The first in importance is family allowances, the second old age security allowances.

British Columbia Raises C.D.A. Grant

The Registrar of the College of Dental Surgeons of British Columbia has officially confirmed that the grant to the Canadian Dental Association for the year 1956 will be calculated on the basis of \$25.00 in respect of each licenced member practising dentistry in British Columbia.

Alta. and Nfld. Raise C.D.A. Grant

Alberta and Newfoundland have officially informed that for 1956 the grant to the C.D.A. will be on the basis of \$25.00 per member.

*Dentist Loses Appeal
(and probably more)*

The appellant in No. 274 v. M.N.R. (before Income Tax Appeal Board) was a dental surgeon who lived in one city and

practised in another, travelling from his home to his office in his own car. Because the laboratory which did his work for him was situated in his home town, and he carried the finished products with him to his office in the car, he claimed that he should be allowed to deduct the entire amount of his car expenses from his professional profits.

Mr. Monet made short work of the claim, which he dismissed without "the slightest hesitation". It was said that the claimant used his car simply because he found it more convenient than using the bus, and there was "no relation whatever between the expenses he incurs . . . and the earning of his income". However the appellant had already been allowed 25 per cent of the expenses by the Department—which Mr. Monet was "at a complete loss to understand".

Fluoridation Notes

North Bay, Ontario, approved fluoridation by municipal vote in December elections. City voters approved by a margin of 440 votes. The North Bay Dental Society is to be congratulated on the character of their publicity campaign which preceded the vote.

Four cities in Western Ontario namely:—London, Chatham, St. Thomas and Sarnia are expected to take action on fluoridation now, following an Ontario Department of Health report that found the procedure harmless and beneficial.

The U.S. Public Health Service reports that in municipalities where fluoridation was voted on by referendum the measure was approved in 104 municipalities and rejected in 127.

C.D.A. — A.D.A. CONVENTION

BANFF

JUNE 3-6, 1956

Committees and Councils

Dental Public Health

During the last National Health Week your committee arranged a radio broadcast on Fluoridation over the coast to coast network of the Canadian Broadcasting Corporation.

It is hoped that the different dental Associations and Societies throughout Canada will take advantage of National Health Week January 29th to February 4th and see that dentistry gets its proper share of publicity at this time. This year British Columbia is following the example of Alberta and Ontario, and is spending a large sum of money on radio and T.V. coverage, public addresses etc., to help put on a good program.

A number of radio scripts and addresses obtained from the American Dental Association and the Alberta Dental Association were reviewed, and changes made which were necessary for Canadian distribution. These are available at dental headquarters.

A large number of news clippings were received which proves dentistry is getting its share of publicity. Fluoridation received a large amount of publicity in these articles of which most were favorable. These articles dealing with dental health which came from the different provinces, help to bring to the public attention the importance of the care of the oral cavity.

Fluoridation of communal waters has received a great deal of publicity during

the past year, and numbers of articles have appeared in the press throughout the country besides numerous radio addresses on this subject. It is gratifying to note the public interest this has aroused, but at the same time rather disappointing that more cities and towns have not taken advantage of this method of reducing dental caries. At the present time some of the municipalities are considering fluoridation of communal waters and it seems likely in the next year quite a number will adopt this program.

An article on Fluoridation and another one on Prevention of Dental Caries were arranged for by your committee and published in *Health Magazine* of the Health League of Canada.

A pamphlet for patients who have received new dentures is being prepared and will soon be available at headquarters at a nominal cost.

Each Province is striving to improve its dental health program with the result these programs are growing rapidly and require additional personnel to keep up with the present demand.

The New Zealand plan on Dental Nurses is being studied and a full report will be submitted at the next meeting of the Board of Governors.

The terms of reference of the Dental Public Health Committee are being revised and will be presented at the Board of Governors meeting at Banff.

Arthur Poyntz, Chairman

This country (U.S.A.) is spending more than a billion dollars annually—about $\frac{1}{8}$ of our health dollar—for grossly insufficient, inadequate, and incomplete dental care services. Yet less than 1% of our health sciences research money is being expended for dental research. Furthermore, less than $\frac{1}{10}$ of 1% of the amount we are expending for dental care is being plowed back into research to help resolve our problems through preventive rather than treatment methods.

John W. Knutson, American Journal of Public Health, March 1954.

Economic Security

All Men are Mortal

Part E—The Cost of Decease

by E. L. R. WILLIAMSON, M.B.E., B.P.A., F.R. Econ. S, Consulting Economist
and Administrator of the C.D.A. Plan.

We now move to consideration of the economic provisions which a man must leave behind him for the protection of his dependents in the event of his decease:

1. "Family Income"

When the breadwinner is removed, the first economic need of the family left behind is a new source of income. Considering the standard of living of the average professional man, it will require from \$250.00 to \$350.00 per month for current expenses (food, clothing, drugs, education, entertainment, and small emergencies) to enable a widow to care for two children and keep the home together until the youngest child has attained its majority and, presumably, is self-sustaining. If rent also must be paid, the monthly income must be increased, or it be understood that the family's standard of living necessarily will be curtailed.

Three hundred dollars per month for a period of twenty years is a total of \$72,000.00. It is difficult to provide this through a capital sum, since a capital sum of \$56,926.00 (after Succession Duties) continuously earning 2½% compound interest on the residue, would be completely exhausted, interest and principal, in providing that income.

Accumulation of an adequate sum by ordinary savings is thus most unlikely, especially for a younger man with a young and growing family. Almost as impossible is such provision of such a sum through principal sums of life insurance (e.g., *Whole Life*—see "Journals" of June, July and August, 1955) since the annual premium would be of the magnitude of \$800.00 to \$1,500.00.

It is possible, however, to provide protection on this scale by the addition to an ordinary size insurance contract of a form of decreasing term insurance generally known as "Family Income". It can be obtained for premiums ranging from \$80.00 to \$200.00 depending on age.

2. "Life Income for Widow"

It is obvious that after having performed alone the task of both parents and at least approaching middle age, a widow is most unlikely to be able to become fully self-supporting.

The problem is exacerbated by the fact that a woman has a longer life expectancy than her husband at the same age, and usually is the younger, thus giving a substantial period for which provision must be made. At age 53, a woman's life expectancy is 29.78 years (American Society of Actuaries), and \$100.00 per month over that period is \$35,736.00. At age 58, her life expectancy is 25.24; at age 63, 20.84 years; and at 68, 16.65 years.

The principal sum of assurance to which the "Family Income" was attached should be allocated for this purpose. A principal sum of \$20,000.00 to a widow age fifty-eight can produce \$100.00 for the rest of her life.

3. "Mortgage Protection"

Security of the home is an asset, both economic and moral, which cannot be over-estimated. Without security of habitation, the stability of the family is imperiled and its material existence placed in jeopardy.

A home in free and clear possession is an essential element in the economic

security of a bereaved family. But the younger practitioner is unlikely to be able to purchase a home without resort to a mortgage, and normally a mortgage automatically is matured by the decease of the mortgagee.

Provision of a sum equal to the undischarged portion of a mortgage at any given time can be provided by addition to a principal sum of assurance. For example, a \$10,000.00 mortgage can be protected over a fifteen-year period for an additional premium of from \$20.00 to \$40.00 annually.

4. "Education Fund"

With the high cost of modern university education, it must be appreciated that to most, such expenses for even one child out of the income indicated in (1) above, would be exceedingly difficult. Yet a university training will increase the lifetime income potential of any boy by more than \$100,000.00 (See October, 1954 "Journal" at p. 560).

Commenced before the child is six months of age, \$183.00 annually will provide \$1,000.00 per year at college age, whether the father be alive and well, disabled, or deceased. For a small additional premium, the Plan can be made self-completing—i.e., no further premiums are required in event of the father's disability or decease, yet benefits paid in full on maturity.

5. "Clean-up Fund"

This is the final "catch-all" which must wind up a man's affairs. In addition to last expenses, it must pay Income Taxes, outstanding accounts, probate and solicitor's fees, and succession duties.

The amount required for this fund will vary from family to family, according to their circumstances. Without taking succession duties into consideration, a sum of \$1,500.00 to \$3,000.00 should be ade-

quate, assuming separate provision for the other items discussed.

It is desirable that there be an additional sum of \$1,000.00 to \$5,000.00 which can be left intact as an emergency fund for the family to meet unexpected contingencies.

The question of Succession Duties is an important one, which requires separate and special treatment. Through the courtesy and co-operation of the Law Society of Upper Canada, it is our privilege to have a dissertation on this subject by one of the recognized authorities on this subject, Mr. W. D. Blair, Q.C. His guest article will appear at an early date.

In addition to all the human and moral losses, the loss of the breadwinner of a professional man's family entails an economic loss of an income potential of \$150,000.00 to \$250,000.00, depending upon his age at decease. Summarized, the minimum economic gap to be filled may be:

Family Income	\$ 72,000.00
Life Income to Widow ..	35,736.00
Mortgage Redemption ..	10,000.00
Education Fund	4,000.00
Emergency Fund	2,000.00
Clean-up Fund	3,000.00
	\$126,736.00

It is possible to meet this very large economic demand created by decease — through Assurance. It also is possible to meet it on terms within the reach of even the young man not long in practice. Comprehensive plans can be secured for as little as \$1.00 per day.

In conclusion of this series examining various phases of the "Canadian Sickness Survey", we have gained a better understanding of the magnitude of the problem of sickness and decease and the economic problems created thereby. "All Men are Mortal", but their good works can be made to live after them.

The Corps

The promotion of Capt. A. G. Andrews, Capt. P. H. Guevremont and Capt. P. S. Sills to the rank of Major has been announced.

Major Andrews, 32, was born in Toronto and matriculated at Riverdale Collegiate in 1943. He saw service in both the Navy and Air Force and following the war attended the University of Toronto. On graduation in 1950 he was appointed to the R.C.D.C. Following a tour of duty in Korea he was posted to No. 13 Company and is now employed at R.C.A.F. Station, Downsview. Major Andrews is married and has three children.

Major Guevremont was born in Sorel, Que., in 1918. He obtained a B.A. degree at St. Hyacinthe in 1939 and his D.D.S. at the University of Montreal in 1944. He served in the Canadian Dental Corps until 1946 when he transferred to the Militia. He was enrolled in the regular army in 1950 and recently completed a two-year tour of duty in Europe. Major Guevremont is now employed at St. Hubert, Que. He is married with three children.

Major Sills, 30, was born in Toronto and received his education there at Jarvis Collegiate and the University of Toronto. He graduated in 1950 and enrolled in the R.C.D.C. He completed a tour of duty in Korea and since that time has served with No. 13 Company. He is at present stationed at Trenton, Ont. Major Sills is not married.

Rotation of personnel to Europe has recently been completed. The following officers, in addition to those previously mentioned, have returned to Canada. Their present stations are also noted:

Major D. H. Hillier, Camp Borden; Major S. W. Muller, Winnipeg; Major E. C. Purdy, Ottawa; Major J. W. Turner, Calgary; Major P. H. Guevremont, St. Hubert; Capt. J. W. Jolly, Trenton.

The following officers have been posted to Europe as replacements:

Major R. E. Brown, Major C. G. B. Grant, Major C. M. Cornish, Capt. P. E. Fafard, Capt. J. McGaughey, Capt. E. J. C. Small, Capt. R. G. Darling, Capt. R. J. K. Pyne, Capt. H. G. Jorgenson.



CANADIAN DENTAL OFFICERS AT
NAVAL DENTAL SCHOOL

Left to right: Lt. Col. W. R. Cunningham, RCDC;
Col. F. R. Drewry, RCDC and Capt. J. H. Sault
(DC) USN.

Deputy Director of R.C.D.C. Visits U.S. Naval Dental School

Colonel Fred R. Drewry, Royal Canadian Dental Corps, Deputy Director of Dental Services (Training), Army Headquarters, Ottawa, Canada, was a recent guest of the U.S. Naval Dental School, National Naval Medical Center, Bethesda, Maryland. Captain Jack H. Sault (DC) USN, Executive Officer of the U.S. Naval Dental School, welcomed Colonel Drewry aboard, after which Colonel Drewry toured the facilities of the school.

Colonel Drewry complimented the Commanding Officer on the splendid manner in which the U.S. Naval Dental School functions and expressed a keen desire for continued training relationship between the Royal Canadian Dental Corps and the U.S. Naval Dental School which has enabled Canadian Dental Officers in the past to undergo instruction at the school.

The Provinces

Saskatchewan

Saskatchewan Dental Association

The officers:

- President — Dr. N. T. Godfrey, Prince Albert
- 1st Vice Pres. — Dr. D. Reid, Prince Albert
- 2nd Vice Pres. — Dr. J. M. Pourbaix, Prince Albert
- Treasurer — Dr. N. R. Fedirko, Prince Albert
- Secretary — Dr. G. H. Janzen, Prince Albert

The committees set up by the Association are as follows:

- from Regina—Public Health
- from Saskatoon — Public Relations and Grievances
- from Moose Jaw—Health Insurance

The association has investigated, discussed and instituted the Post Payment Plan. The officers are anxious that all members should remember that the next Convention will be at Waskesiu August 30 to Sept. 1, 1956.

Regina District Dental Society

Officers for the year 1955-56 are as follows:

- President Dr. D. N. Parker
- Vice President Dr. B. J. Koenig
- Secretary Dr. C. M. Weicker
- Treasurer Dr. F. T. Smith

New members welcomed to the Society by the President at the first meeting were Drs. Gordon Schwann, Gerald Evenden, and Gordon Mitchell.

Guest speakers during the fall term have been Dr. T. Parsons of New Westminster, B.C.; Dr. Gordon Mitchell, an Orthodontist of Regina; and Dr. G. M. Malone, the President of the Regina and District Medical Society. The latter, in his presentation, traced the events leading up to the referendum being held in two districts (and resoundingly defeated) as to whether the residents wished to become involved in a Provincial Government non-voluntary Health Insurance Scheme. The fall session concluded with the annual cocktail party and supper held at the Assiniboia Club.

L. D. H.

The Prince Albert and District Dental Society held their last supper meeting of the

year at the Prince Albert Club on Dec. 1, 1955.

Prompted by other Dental Societies in the Province, the question of a fee schedule was again discussed. It was pointed out that in the past number of years the economy of the country had changed drastically and that the cost of schooling, equipment, supplies and social obligations had risen out of proportion to the income, which was governed by relatively stable fees. Problems relative to the raising of fees were discussed but no definite conclusion could be reached. A committee of Drs. Bob Reid, Geo. Janzen, Norbert Dust and Jack Pourbaix was appointed to study the situation in more detail and to submit to the dental society a revised fee schedule at the next meeting.

The first regular meeting of the Moose Jaw Dental Society was held in the Grant Hall Hotel, October 14th.

The following officers were elected for the ensuing year: President, Dr. Ted Bradley; Vice President, Dr. Don Kroshus; Secretary Treasurer, Dr. Gordon Beesley.

At the request of the S.D.A., executive for the Moose Jaw Society to supply a committee on Health Insurance Studies for the province, the following committee was set up: Dr. A. M. Lowery (Chairman); Dr. Don Kroshus; Dr. Ted Bradley.

At the second regular meeting in November, the society met with representatives of the medical profession to discuss the question of hospitalization of dental patients.

Dr. Parsons of New Westminster conducted a clinic in the Union hospital and demonstrated operative dentistry for children under general anesthesia. The clinic was well attended and very much appreciated.

On Dec. 8, Dr. Shirley Locke, chairman of the Post Payment Plan, and Mr. Jackson of Saskatoon, met with the members of the Moose Jaw society, in which Dr. Locke and Mr. Jackson discussed fully the Post Payment Plan.

L. D. H.

Ontario

North Bay is the second city in Canada to approve fluoridation of community water supplies in a municipal election. The voters favoured fluoridation 2,316 to 1,876.

The fluoridation question had received solid backing from medical and dental authorities before the election.

Only two other Canadian cities held a municipal vote on fluoridation, with one favourable and one opposed.

Dr. Harry Bateman of Toronto, President of the Ontario Dental Association, was a guest at the regular dinner meeting of the **Kent County Dental Association** held at the William Pitt Hotel.

Main discussion concerned matters pertaining to the Canadian Dental Association, and was led by Dr. Don W. Gullett, secretary of the association, assisted by Dr. Murray Campbell of Chatham and Dr. Roy Winn of Kitchener. The afternoon meeting was taken up with considerations of assurance programs.

The 1955-56 program of the **Hamilton Dental Association** is off to an ambitious start. At the first meeting, October 13th, Dr. Ed. Johns, orthodontist from Kingston, was the speaker. Dr. Johns spoke on his trip to Greece in the summer of 1951. He accompanied Dr. R. Moyers in surveying the dental conditions of children in a remote mountain community. The talk was beautifully illustrated and included a description of the people and living conditions of post civil war Greece.

The second meeting was held November 10th. Dr. W. Feasby explained the organization and purposes of the nearby Burlington research clinic which is under the direction of Dr. Frank Popovich. The guest speaker, Dr. Wallace Graham of Toronto, discussed Rheumatic Diseases and made special reference to the dubious relationship of so-called oral foci of infection to specific rheumatic conditions. Members of the Hamilton Academy of Medicine attended to hear Dr. Graham.

On December 8th, the Hamilton Dental Association entertained the nurses and assistants of the members at the annual Christmas meeting. Dr. N. A. Mancini proposed a toast to the ladies and Miss Jean Morden responded. The dental technicians and dental supply representatives joined the meeting also.

Association President, Dr. Geo. Morrow, introduced Mr. A. Alexenian who gave an interesting travelogue entitled "The Magic Carpet". He described his visits to the Near and Middle East and showed coloured movies. Since Mr. Alexenian was raised in Turkey he was able to add many interesting biographical notes.

Erratum

It was erroneously reported in the December issue that Dr. A. W. S. Wood of Toronto had been elected to the Board of

the American Academy of Periodontics. Dr. Wood was elected to the Board of the American Academy of Pedodontics.

British Columbia

Forty years ago the **B.C. Dental Association** came into being, and the latest edition of the News Bulletin carries a synopsis of the first annual meeting, which was held in March, 1916. It is significant that at this time the steps necessary to incorporation have been completed and a copy of the new Constitution has just been mailed to the dentists of British Columbia.

The **Upper Island Dental Society** has had several interesting meetings in recent months. An income tax specialist gave a very humorous and instructive talk. At the next session there was a film and round-table discussion on "Amalgam", and lastly a Royal Canadian Dental Corps team under the leadership of Lt.-Col. Skragge spoke on the subject "Korea". These new officers were chosen:

President — Dr. Garnet Montgomery, Qualicum Beach.

Vice President — Dr. Fred Lind, Courtenay.

Secretary-Treasurer — Dr. Daphne Gill, Nanaimo.

Program Chairman—Dr. H. Dombrowski, Port Alberni.

The **fluoridation plebiscite in Kamloops** was not a success. The local dentists did a lot of talking to service clubs, P.T.A.'s and over the radio, and had splendid press co-operation. But even so, the vote was 700 for and 900 against. It is felt that the people just did not seem to be interested enough to find out anything, and as there was doubt, they voted against the measure. There was no opposition at the public lectures given by the dentists, and the one meeting held by the "antis" had a poor attendance.

The **Victoria and District Dental Society** followed the traditional pattern in December and relaxed in a social manner with a dance which was held at the Empress Hotel. Prior to the function thirty couples gathered at the home of Dr. and Mrs. Alex Gunning for cocktails.

Speaking at the December meeting of the **Vancouver and District Dental Society**, Dr. John B. Macdonald, the B.C. University's Dental Consultant, announced that his survey has been completed. He said that 65% of the public are not receiving dental ser-

vices. The remedy — (1) More dentists is part of the answer. Substitutes for dentists (as in New Zealand) have proved of no value. (2) Prevention in the form of fluoridation would take care in part of the shortage of dental personnel. (3) Dental research: President Conant of Harvard says that "Dental research is a comparatively new field."

The type of dental school required would be one which would graduate dentists with the best possible education, the best training in the basic sciences, trained in all the physical sciences, and who, upon graduation, would have the best skill available at that time. The graduate must have an incentive to maintain his skill at the highest level throughout his career. His education must be sufficient to allow him to proceed to a specialty if he so desires. Dental graduates must move the frontiers forward and bring about the dream of complete dental service for all.

D. H. M.

Newfoundland

Dr. Michael Francis Hogan was recently made a life member of the **Newfoundland Dental Society**. At a special dinner at the Newfoundland Hotel he was presented for life membership by Dr. E. P. Kavanagh and the certificate was presented by Dr. J. M. Darcy, President of the Society. About 40 dentists, their wives and guests attended the function.

Special guests, besides Dr. and Mrs. Hogan, their three daughters, Joan, Ann and Sheila, were J. S. Higgins and Dr. L. Miller, Deputy Minister of Health.

Dr. Hogan was born in Carbonear, October 14, 1897. He received his early education in Carbonear and later entered St. Bonaventure's College.

He graduated from Dalhousie University Dental School in 1923 and has practised in St. John's ever since. In 1930 he was made a fellow of the International College of Dentists, the only Newfoundlander to be so honoured. In 1936 he was elected to membership in the Eastern College of Anaesthetists after a period of post graduate training in New York.

Newfoundland's representative on the Dental Council of Canada, he is past president of the Newfoundland Dental Association and vice chairman of the Newfoundland Dental Board. He is also a member of the Elks Club.

Dr. Hogan is also a member of Rotary, City Club, Bally Hally Curling Club, B.I.S., Knights of Columbus and the St. Bon's Old Boys' Association.

He is chief of the dental service at the General Hospital and visiting dentist at the sanatorium.

Alberta

Fifty-six members of the **Calgary and District Dental Society** met in the Palliser Hotel on Monday afternoon and evening of December 5th, 1955 for the regular monthly evening.

Guest clinicians of the day, Dr. G. A. Brass, Dr. R. V. Blackmore, Dr. L. A. Hague, Dr. D. S. Gilmour and Dr. W. I. M. Steen of Edmonton and the University of Alberta presented a series of table clinics in the afternoon on the Amalgam Restoration — In All Its Aspects. Each clinician dealt with a different phase of the subject, illustrating graphically with models and illustrations.

Dr. W. Ross Upton, President of the Society, officially welcomed the Edmonton visitors at the evening dinner meeting. Dr. G. A. Brass, Associate Professor of Operative Dentistry of the Faculty of Dentistry, University of Alberta and guest speaker of the evening, was introduced by Dr. M. J. Lipkind. Dr. Brass carried his subject "The Amalgam Restoration" from placement of the rubber dam through to polishing of the completed restoration, emphasizing the use of a simple and effective and very stable matrix retainer. He illustrated his procedures with excellent slides of actual cases.

The clinicians of the afternoon meeting and the guest speaker, Dr. G. A. Brass, were thanked by Dr. Gerald Locke, on behalf of the Society.

Following very thorough discussion, a report prepared by Doctors J. W. Clay, J. Zimmerman and R. R. McIntyre calling for endorsement by the Society of a carefully controlled program of Topical Fluoridation to be carried out through the Calgary school system for certain age groups, for a nominal token fee, was adopted by the Society. It was felt such a program would prove invaluable as an educational measure towards final implementation of fluoridation of the communal water supply.

M. J. L.

The monthly meeting of the **Central Alberta Dental Society** was held in Lacombe, December 7, 1955.

Dr. S. Fleming presided as chairman.

A committee headed by Dr. A. White was set up in preparation for Alberta Dental Health Week.

The guest speaker, Dr. E. W. Paul Luxford, of Calgary, was introduced by Dr. C. D. Husband. Dr. Luxford discussed Dental Haemorrhage and its Control, Surgical Flap Operations and Frenectomies and illustrated with slides and models.

Dr. Semple thanked the speaker for his excellent presentation.

M. S. B.

In Memoriam

Rollin Oswald Dickson—Dr. Rollin Oswald Dickson passed away suddenly at his home in Toronto on December 16, 1955. He was 74.

Born in Toronto, Dr. Dickson received his early education there and in 1903 graduated from the Royal College of Dental Surgeons of Ontario. He practised in Toronto until 1939 when he opened an office in Newcastle, Ontario.

Dr. Dickson was an Honorary Member of both the R.C.D.S. and the Academy of Dentistry, Toronto. He was a member of the United Church and belonged to the Masonic Lodge.

Surviving Dr. Dickson are his wife, the former Jean Gallinger and his daughter, Frances, (Mrs. Frank Hoey).

William Barratt Clayton — Col. William Barratt Clayton died on December 1, 1955 at Auckland, New Zealand. He was 83.

He was director of the Canadian Army Dental Corps during the First World War, serving both in Canada and overseas.

Born in Dearborn, Michigan, of English parentage, Col. Clayton came to Victoria in 1890 and after studying dentistry, practised at Nelson, Prince Rupert, and Duncan.

He moved to New Zealand on his retirement.

Surviving are the widow, three sons, John of Vancouver, William at Alberni and Pitt at NanOOSE, and one daughter, Clemency, at Vancouver.

Arthur Jemison — Dr. Arthur Jemison died on December 22, 1955. He was 85.

Born in Victoria County, Ontario, Dr. Jemison graduated from the Royal College of Dental Surgeons of Ontario in 1901. Since graduation he had practised in Millbrook.

Since 1905 he was a member of the Masonic Lodge, became a Worshipful Master in 1914-1915, District Deputy Grand Master of Peterborough District 1929-1930, member of the Ancient and Accepted Scottish Rite, Peterborough Valley, 1922.

Dr. Jemison was the Sunday School Superintendent from 1909 to 1914 and taught Sunday School until 1920. He was an Honorary Member of the R.C.D.S. and an elder in the Presbyterian Church. Later he attended St. Andrew's United Church in Millbrook.

Surviving Dr. Jemison are his cousins, George Hooten of Fairmont and Harry Jamieson of Mount Pleasant.

Xiste Laberge — Dr. Xiste Laberge of Montreal passed away on December 12, 1955 after a long illness. He was 69.

Dr. Laberge attended the Valleyfield

Seminar for his early education and later received his diploma from the University of Montreal and Northwestern University in Chicago. He was President of the Montreal Dental Society and was a Church Warden at the Parish of St. Denis.

Dr. Laberge was predeceased by his wife, the former Isabell Lefebvre, who died suddenly on November 29, 1955. He leaves his daughters, Marcelle, Anne-Marie, Rejane, Therese, Claire, Francine, and his sons, Paul, Gerard, Andre.

Alfred Carman Brown — Dr. Alfred Carman Brown passed away suddenly at his home in Kitchener on December 20, 1955. He was 59.

He was born in Bancroft, Ontario, son of Mrs. Gertrude Brown, Trafalgar, and the late Rev. Alfred L. Brown. He was graduated from the Royal College of Dental Surgeons in 1924 and then came to Kitchener. He was a member of the Hamilton Dental Association and the Inter-County Dental Society.

An active member of Trinity United Church, he had been an elder for some time.

Dr. Brown is survived by his wife, the former Mildred McCulloch, and two brothers, Rev. Redvers Brown of Trafalgar and Vernon, of New Westminster.

Harry McKenzie Clark — Dr. Harry Clark passed away on December 21 in Vancouver at the age of 59. He was born in Victoria and graduated from North Pacific College in 1923, when he established a practice in Vancouver. In recent years he did not engage in practice. Surviving is his wife Freda, whom he married a few years ago.

James Dance — Dr. James Dance of Montreal died on December 26, 1955 following a lengthy illness. He was in his 68th year.

Born at Carnforth, England, he came to Canada in 1907 and later attended McGill University where he graduated in dentistry which he practised for more than 25 years. At the time of his death he was President of Kearney Bros. Limited and W. D. Stroud and Sons.

He was a charter member of the Montreal Progress Club and was active in social service work, particularly in former years at the University Settlement. He was also very active in the Anglican Church, and, for a number of years, served as assistant in Christ Church at Rawdon.

He was a keen curler for many years and belonged to the Thistle Curling Club.

He is survived by his wife, the former Blanche Mason, and three sons.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1956	Banff, Alberta	June 3rd-6th
1957	Winnipeg, Manitoba	June 23rd-26th

FUTURE EVENTS

Date	Function	Location	Officer	Address
Mar. 7-8	Tufts University	Boston	Tufts University Dental Alumni Association	Mid-Winter Meeting, 136 Harrison Ave., Boston 11, Mass.
Mar. 16	Ottawa Dental Association Dinner in honour of Dr. F. A. French and Dr. S. W. Bradley	Ottawa	Dr. J. R. Callingham	226 O'Connor St., Ottawa, Ontario.
May 13-16	O.D.A. Convention	Toronto	Mrs. R. E. Booker	234 St. George St. Toronto, Ont.
May 14	3T1 Twenty-fifth Reunion in conjunction with O.D.A.	Toronto	Dr. R. E. Martin	1466 Bathurst St., Toronto 10, Ont.
May 17-19	B.C. Dental Assoc. Convention	Vancouver	Dr. K. R. McWilliams	217 Medical Dental Bldg., Vancouver, B.C.
June 17-21	Berkshire Conference in Oral Pathology and Periodontology	Lenox, Mass.	Tufts University, School of Dental Medicine	136 Harrison Ave., Boston 11, Mass.
June 21-24	American Academy of Dental Medicine Meeting	Detroit	Dr. G. J. Witkin	45 South Broadway, Yonkers 2, N.Y.
June 27, 28 and 29	Maritime Dental Association Convention	Halifax	Dr. E. F. Dexter	5 Dutch Village Road, Halifax, N.S.
Sept. 7-14 1957	Congres de la Federation Dentaire Internationale	Rome, Italy	G. H. Leatherman	Secretary, London, England

SHORT GRADUATE COURSES

Tufts School of Dental Medicine announces the following short courses:

Mar. 19-21	Cephalographies and Diagnosis
Mar. 19-23	Intravenous Anaesthesia for the Dental Office
Apr. 9-13	Periodontology
Apr. 6-May 4	Electrosurgery
June 4-8	Full Denture Prosthesis

Address communications to: Dr. Irving Glickman, Director, Division of Post-Graduate Studies, 136 Harrison Ave., Boston, Mass.

Northwestern University announces fifteen short postgraduate courses during the 1955-56 academic year. For further information write the Director of Dental Postgraduate Study, Northwestern University Dental School, 311 East Chicago Avenue, Chicago 11, Illinois.

New York University announces a five day course in Occlusal Equilibration from June 11-15, 1956. For further information contact: Secretary, Postgraduate Division, New York University College of Dentistry, 209 East 23rd Street, New York 10, N.Y.

University of Toronto, Faculty of Dentistry announces the following short courses:

Mar. 1	Courses leading to Specialist Certification
Mar. 5-9	Endodontics
Mar. 19-23	Orthodontics (For the General Practitioner)
Mar. 26-28	Orthodontics (For the Specialist)
Apr. 23-27	Periodontics
Apr. 30-May 4	Dental Oral Surgery and Anaesthesia.

Address communications to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College St., Toronto 2-B, Ontario.

The American Institute of Dental Medicine continues to offer Case Histories from the broad field of Dental Medicine. These will include original 35 mm. Kodachrome slides of the oral condition, pertinent laboratory findings, medical background, roentgenograms, histologic slides etc. For further information contact Mrs. C. Novembri, 2240 Channing Way, Berkeley 4, California.

ADVANCED REGISTRATION

JOINT MEETING

THE CANADIAN DENTAL ASSOCIATION

ALBERTA DENTAL ASSOCIATION

BANFF SPRINGS HOTEL



REGISTRATION FEE \$30.00

(Includes ladies' registration)

MAKE CHEQUES PAYABLE TO: C.D.A. - A.D.A. CONVENTION



Mail Application Form Below To:—

DR. J. A. DUNCAN, 3047—25th St., S.W., CALGARY, ALBERTA

REGISTRATION

NAME: DR.

ADDRESS:

CITY: PROVINCE:

ACCOMMODATION DESIRED:

..... Double Occupancy, Double Bed

..... Double Occupancy, Twin Beds

Detach and mail this application form and \$30.00 registration fee (all inclusive) to:

DR. J. A. DUNCAN, 3047—25 St. S.W., Calgary, Alberta.

Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

Le rôle de la pharmacie dans la santé publique*

par ROGER LAROSE, assistant-professeur, Faculté de Pharmacie, Université de Montréal

En 1918, pendant la fameuse grippe espagnole, je m'amusais, enfant, et fils de pharmacien, à tailler des carrés de camphre que les clients s'arrachaient et suspendaient à leur cou comme des amulettes.

Au début de cette année 1955, j'ai suivi avec un intérêt tout particulier les premières injections du vaccin Salk dont on peut déjà apprécier statistiquement les bienfaisants effets.

Entre ces deux dates, une période de trente-sept ans, une moitié de vie d'homme, j'ai été, comme vous Messieurs, témoin de découvertes merveilleuses. On n'a qu'à se remémorer, en les énumérant, les nouvelles médications du dernier quart de siècle, les hormones, plusieurs vitamines, les antihistaminiques, les sulfamidés, les antibiotiques, les hypotenseurs, les dérivés et les substituts de la morphine, les barbituriques, les anesthésiques.

Et que de pas de géants a fait la médecine préventive! L'immunisation et l'hygiène ont littéralement vidé certains hôpitaux spécialisés. Si l'on n'a plus le droit, aujourd'hui, de vous qualifier "d'arracheurs de dents" et de "menteurs", on n'a plus le droit non plus de craindre le chirurgien avec hantise et de dire des hôpitaux qu'ils sont les antichambres des charniers. Pourquoi persiste-t-on à calomnier la pratique pharmaceutique? C'est peut-être la faute du pharmacien lui-même! C'est sûrement parce que l'on ne pénètre pas derrière la façade de certaines officines modernes. Je vais tenter, pendant les quelques minutes mises à ma disposition; d'explorer avec vous ce domaine vaste et complexe de la pharmacie moderne.

Nous sommes d'accord que la prévention et la guérison des maladies exigent une lutte continuelle. Je voudrais vous prouver que cette lutte n'incombe pas seulement aux professions médicale et

* Conférence présentée à la Société dentaire de Montréal, le 15 novembre 1955.

médico-dentaires, mais aussi, entre autres, à la profession pharmaceutique.

Tout d'abord, qu'est ce que la pharmacie? On peut dire brièvement que c'est la science des médicaments. Partout où apparaît le médicament, on trouve aussi la trace du pharmacien.

Les étapes de la vie du médicament peuvent se grouper sous cinq titres:

- 1) la recherche
- 2) l'analyse
- 3) la fabrication
- 4) la distribution
- 5) l'administration et la consommation.

La recherche, l'analyse, et le plus souvent la fabrication, exigent des connaissances approfondies et de plus en plus spécialisées. C'est la raison pour laquelle plusieurs entreprises chimiques se spécialisent uniquement dans la fabrication de préparations pharmaceutiques.

Distinguons tout de suite entre les grandes maisons de recherche qui extraient, soit de la nature, soit des synthèses chimiques, des substances qu'elles transforment en médicaments, et les autres, plus modestes, qui se contentent de donner à des substances déjà connues une forme pharmaceutique. Les premières se sont détachées pour la plupart, en se spécialisant, d'entreprises chimiques plus complexes. Ainsi les manufacturiers de dérivés de l'aniline, au début du siècle, ont orienté une partie importante de leur recherche et de leur fabrication vers la production pharmaceutique. Les autres, celles qui ne font pas de recherche, ont le plus souvent vu le jour dans des officines dont le propriétaire pharmacien, plus entreprenant, avait compris les possibilités d'une telle expansion. D'autres enfin furent l'oeuvre d'hommes d'affaires ou de financiers qui s'associèrent des pharmaciens ou des spécialistes déjà engagés dans la fabrication ou la vente des médicaments. Ce qui nous intéresse cependant, c'est le pharmacien. Aujourd'hui, l'industrie pharmaceutique ouvre un vaste champ d'activité aux pharmaciens qui désirent se spécialiser dans une des étapes du médicament énumérées précédemment.

En effet, de nos jours, à la recherche, à l'analyse, à la fabrication, on trouve un grand nombre de pharmaciens. A la distribution, que le fabricant partage avec les grossistes, les pharmaciens détaillants, les hôpitaux, les services gouvernementaux, les services de l'armée, de la marine et de l'aviation, s'emploient tous les autres pharmaciens qui ne sont pas sortis des cadres de la profession.

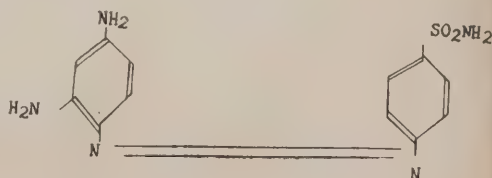
Examinons maintenant de plus près les fonctions du pharmacien dans le développement d'un médicament; nous parlerons ensuite de la distribution et du nouveau rôle qu'y joue le pharmacien détaillant. De la recherche à la fabrication proprement dite, il y a de nombreuses tâches auxquelles participe le pharmacien:

- a) la recherche chimique ou biologique
- b) la recherche pharmacodynamique
- c) la recherche galénique, aussi appelée pharmaceutique
- d) la fabrication préliminaire
- e) l'expérimentation clinique
- f) la révision de la forme pharmaceutique d'après les résultats des expériences cliniques
- g) la fabrication proprement dite.

a) *La recherche chimique ou biologique.*

Souvent, le point de départ de la recherche chimique est une substance naturelle ou synthétique, de composition et d'action connues, qu'il s'agit de modifier pour la rendre plus active, moins toxique, mieux tolérée, ou pour en diminuer les effets secondaires. Un exemple d'un tel développement est celui des sulfamidés.

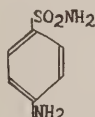
En 1935, Domagk et ses collaborateurs observaient que le Prontosil, un colorant du groupe azoïque, était très efficace dans le traitement de la souris infectée de streptocoques virulents, mais aussi très toxique et très dangereux. La formule du Prontosil est la suivante:



D'autre part, on pouvait montrer que la chrysoïdine, dont voici la formule



n'avait aucun effet sur les bactéries. C'était la preuve que le groupe $-SO_2-NH_2$ était d'une importance fondamentale. Plus tard, Tréfouël, Nitti et Bovet découvrirent que la double liaison entre les deux N n'est pas nécessaire pour produire l'effet anti-bactérien, et on trouva que la p-aminobenzènesulfonamide ou sulfanilamide



était efficace contre les streptocoques et les méningocoques et d'autres. Depuis cette découverte, on a synthétisé des milliers de sulfamidés dont quelques-uns avaient des avantages évidents sur la substance mère. Les préparations les plus récentes de ce groupe sont douées d'une grande efficacité sur un nombre très considérable de micro-organismes et en outre sont d'une faible toxicité et d'une excellente tolérance. Ainsi l'Elkosine. A ce genre de recherche travaillent des docteurs en pharmacie dont les connaissances de base sont les mêmes que celles que nous donnons à nos étudiants.

Très près de nous, un pharmacien, Victorien Frédette, aujourd'hui docteur ès sciences de la Sorbonne et sous-directeur de notre Institut de Microbiologie et d'Hygiène, un diplômé de notre Faculté de Pharmacie, a développé un vaccin contre la gangrène gazeuse, accomplissant là une recherche bactériologique de belle tenue.

b) La deuxième étape est la *recherche pharmacodynamique* qui se fait d'abord sur des tissus ou des organes isolés afin de vérifier si la substance possède une action spécifique sur certains organes ou

systèmes d'organes. Après ces études détaillées, les substances sont essayées sur des organismes entiers, animaux de toutes tailles, afin de déterminer leur toxicité et aussi leur efficacité thérapeutique. Il est évident que, dans le second cas, il faut d'abord tâcher de créer chez l'animal l'état pathologique ou un état semblable à celui que l'on désire traiter par la nouvelle substance. Ceci pose souvent des problèmes difficiles, puisque chez l'homme on trouve des maladies dont les animaux ne sont pas atteints normalement. De plus, l'interrelation des fonctions organiques est si complexe que l'expérimentateur doit tenir compte de la multiplicité des effets et établir un équilibre entre, d'une part l'action thérapeutique, et d'autre part les effets secondaires ou toxiques.

Si des pharmaciens font de la recherche chimique et biologique aux côtés des chimistes et des biologistes, c'est au niveau de la pharmacodynamie que la pharmacie et la médecine établissent leur étroite parenté. Le médecin, par tradition et par formation, est un anatomiste et un physiologiste. La pratique de la pharmacodynamie est impossible sans des connaissances vastes et précises de ces deux disciplines. Par ailleurs, le pharmacien est le spécialiste du médicament et on définit la pharmacodynamie comme la science de l'action du médicament sur le corps sain ou malade. Aussi n'est-il pas rare, particulièrement en Europe et aux Etats-Unis, de rencontrer des pharmacodynamistes qui ont puisé aux deux sources et cumulent les diplômes de pharmacien et de médecin.

De la pharmacodynamie, nous passons à

c) la *recherche galénique ou pharmaceutique*. Le but de cette recherche est de trouver la forme d'application la plus appropriée, en tenant compte des propriétés chimiques, physiques et pharmacologiques de la substance, ainsi que de la destination thérapeutique. Nous voilà maintenant en pleine pratique pharmaceutique. On attache aujourd'hui à la forme une importance sans cesse croissante. A mesure que progressent la phy-

siologie, la pharmacodynamie et l'analyse biologique, s'accroît l'intérêt que l'on porte à la stabilité, au mode d'administration, à l'assimilation et à l'élimination. La recherche galénique ou pharmaceutique reste sans doute consciente de la nécessité commerciale de "dorer la pilule", mais ses motifs sont aujourd'hui d'ordre nettement scientifique. C'est un domaine où le pharmacien ne subit pas la concurrence des chimistes, des médecins et des ingénieurs. Lui seul, le pharmacien a fait les études spécialisées qui permettent de façonner une forme pharmaceutique et d'en faire la formulation. Vous n'ignorez pas combien nombreuses sont ces formes. J'en énumère rapidement quelques-unes:

I) pour application interne par voie buccale:

a) solides: les comprimés, les dragées, les capsules, et plus récemment les formes spéciales pour résorption perlinguale, telles que les Lingettes de certaines hormones ou encore les comprimés à action retardée (Delayed Action Tablets) ou à action répétée du type Duplex qui seront mis à la disposition des médecins canadiens très prochainement.

b) liquides: les gouttes, les elixirs, les sirops (à base de solutions aqueuses ou alcooliques ou de suspensions).

II) pour application parentérale: les solutions injectables aqueuses en ampoules, en flacons à doses multiples ou en "carpules", pour emploi intraveineux, intra-artériel, intramusculaire ou sous-cutané; ou encore les solutions huileuses pour administration intramusculaire; ou encore les suspensions aqueuses de micro-cristaux, telles les Crystoules qui permettent de mettre un dépôt de substance hormonale dans le tissu musculaire, pour résorption lente et graduée.

III) pour application par voie intestinale: les suppositoires; par voie vaginale: les ovules et les inserts.

IV) pour application locale: les onguents, crèmes, liniments, solutions aqueuses et huileuses pour la peau, l'oeil, les muqueuses.

Lorsque la forme galénique a été provisoirement fixée, on passe à

d) la fabrication industrielle prélimi-

naire. L'endroit où cette fabrication a lieu est connu dans l'industrie sous le nom de "pilot plant".

Un "pilot plant" est installé avec les mêmes types d'appareils que ceux de la grande usine. Il permet d'étudier les problèmes de la fabrication sans qu'il soit nécessaire de mettre en jeu de grandes quantités de matériel ou un appareillage coûteux. C'est une phase intermédiaire entre le laboratoire et l'usine, où le pharmacien travaille en collaboration avec le chimiste et l'ingénieur. En même temps, la fabrication préliminaire permet de préparer des quantités de substance suffisantes pour

e) l'expérimentation clinique. C'est maintenant seulement que la nouvelle substance est mise à l'épreuve chez l'homme, sous la surveillance de cliniciens expérimentés et critiques. Les grandes maisons de l'industrie pharmaceutique soumettent leurs nouveaux médicaments à l'examen simultané dans les centres médicaux de plusieurs pays pour avoir autant d'opinions et de suggestions que possible portant sur l'efficacité, le champ d'application, les effets secondaires, le dosage et la forme d'administration. C'est seulement sur la base des opinions exprimées par les expérimentateurs cliniques qu'une décision est prise par une maison sérieuse quant à l'introduction commerciale d'un médicament. Le pharmacien ne fait pas l'expérimentation clinique, mais il est souvent l'homme de contact entre l'industrie et le médecin. Il connaît la nature du produit et peut interpréter les résultats de l'expérimentateur en fonction de la mise sur le marché.

Pour illustrer la rigueur des épreuves auxquelles une nouvelle substance est ordinairement soumise, je peux vous affirmer que sur mille substances synthétisées, deux seulement en moyenne sont commercialisées.

Après que l'introduction d'une substance a été décidée en principe, on peut passer à

f) la révision de la forme pharmaceutique d'après les expériences cliniques,

c'est à dire la détermination des concentrations, etc. Après cette révision, le nouveau médicament est finalement prêt pour

g) *la fabrication proprement dite*
et

h) *la distribution par le manufacturier.* Ceci implique la préparation de la littérature sur le produit et du matériel d'emballage, conformément aux prescriptions légales, la soumission du nouveau médicament, des textes de la littérature sur le produit et du matériel d'emballage aux autorités de la Santé Publique en vue d'obtenir leur approbation, et finalement l'information du médecin, du dentiste, du pharmacien détaillant, de l'infirmière sur les propriétés et les avantages du nouveau médicament. Au Canada, plus de cinquante pharmaciens y consacrent leur carrière professionnelle. On les trouve à absolument tous les postes, de l'administration à la visite médicale.

Parlons maintenant du pharmacien détaillant. Je peux en parler avec objectivité puisque je suis dans l'industrie et aussi avec fierté parce que je le comprends et le respecte. Toutes les absurdités et les calomnies que l'on dit à son sujet, et tous les mauvais mots que l'on répète, je vous en ferai grâce, puisqu'ils vous sont sûrement déjà familiers. Je vais plutôt tenter de vous faire connaître le véritable rôle du pharmacien détaillant dans le domaine de la santé publique.

Examinons d'abord certains aspects évidents de son travail. Il reçoit de l'argent en échange de produits. C'est donc, en ce sens, un commerçant. Il remplit des prescriptions, mais en ce faisant, il n'utilise à peu près plus les vieilles techniques qui lui valaient sa réputation antérieure d'homme de laboratoire. Il ne se fait pas faute de vendre certains articles de commerce qui sont souvent étrangers à la fonction propre de son établissement. C'est un homme bousculé par une clientèle exigeante qu'il ne reçoit pas, comme vous, sur rendez-vous. C'est un commerçant-professionnel qui travaille de longues heures, chaque jour, à acheter, recevoir, débiller, marquer, étaler, vendre

des produits et, d'autre part, à faire profiter le patient, le dentiste, le vétérinaire, le médecin, l'infirmière, de ses connaissances scientifiques. C'est enfin un honnête homme qui rend de nombreux services et qui est cependant rarement payé pour les services qu'il rend.

Ce qui nous déroute chez le pharmacien détaillant, c'est qu'il a lui-même mal compris l'évolution que lui impose le progrès vertigineux des sciences médicales. Le pharmacien détaillant avait centré sa profession sur ce que l'on est convenu d'appeler la prescription magistrale. Il recevait du praticien de longues formules aux ingrédients plus ou moins actifs et plus ou moins compatibles, qu'il devait préparer dans les limites des techniques de préparation que lui avaient léguées ses prédécesseurs et des quelques formes pharmaceutiques qui lui permettaient ses modestes techniques. Ce n'était pas cela qui faisait de lui un professionnel. Un professionnel, c'est un homme qui applique ses connaissances, son intelligence, son jugement et ses qualités morales à rendre des services dont la valeur dépasse la rémunération qu'il en reçoit. Cette fonction d'ordre professionnel, le pharmacien a aujourd'hui beaucoup plus qu'autrefois, l'occasion de la remplir. Tous ceux qui prescrivent, administrent ou utilisent des médicaments sont médusés par la multiplicité et la variété des substances thérapeutiques. C'est au pharmacien, croyez-m'en, qu'ils s'adressent tous pour recevoir des éclaircissements. Celui qui prescrit demande au pharmacien des explications sur la nature, la dose et la forme du médicament; celui qui l'administre, sur le mode d'administration et les effets secondaires; celui qui le consomme, sur tout à la fois. Le patient moyen, tant qu'il est en face du médecin, ne pense qu'à sa maladie et à ses relations avec le médecin. Ce n'est que plus tard, ordinairement chez le pharmacien ou à la maison, qu'il pense au médicament prescrit. Le plus souvent il n'a rien compris de ce que le médecin lui a dit concernant le traitement. C'est au pharmacien que le patient alors s'adresse. Vous pensez peut être que

j'exagère ou que je théorise? Faites un examen de conscience. Vous qui vous trouvez à un moment ou à l'autre en face de chacune des trois situations; prescrivant, administrant et consommant des médicaments, ne consultez-vous jamais votre pharmacien? Et cependant, vous avez l'expérience de la prescription, vous administrez chaque jour des médicaments et je n'oserais pas vous classer parmi les patients moyens. Si la pratique du pharmacien détaillant a changé, elle n'a rien perdu de son caractère professionnel, et lorsque l'on parle du rôle du pharmacien dans la santé publique, on n'a vraiment pas le droit d'exclure le pharmacien détaillant.

On peut se demander si par sa formation professionnelle, le pharmacien est particulièrement qualifié pour jouer un rôle prépondérant dans toutes les phases du développement d'un médicament, qu'elles se déroulent dans le laboratoire, l'usine, la pharmacie de détail ou ailleurs.

Pour être admis à l'étude de la pharmacie, l'étudiant doit avoir un baccalauréat ès arts ou passer un examen d'admission qui se compare aux examens du baccalauréat. Il étudie pendant quatre années, les mathématiques, la chimie, la physique, l'anatomie, la physiologie, la biologie, la bactériologie, et les sciences pharmaceutiques. Le cours comporte plus de 2000 heures d'enseignement théorique et de travaux de laboratoire. Il doit faire dans une pharmacie de détail ou d'hôpital 500 heures de stage par année. Après quatre ans, son diplôme universitaire en poche, il doit faire une année complète de stage avant de recevoir le droit de pratique. S'il veut se consacrer à l'enseignement, à la recherche et à certaines fonctions industrielles, il continuera ses études jusqu'à la maîtrise et même jusqu'au doctorat, ajoutant ainsi trois années d'études supplémentaires à ses quatre années d'études de base. Rien d'étonnant qu'il se considère comme un homme de science et un professionnel.

Il n'est pas surprenant non plus que sa collaboration soit également demandée par les services fédéraux, provinciaux et municipaux de la santé et de l'hygiène

publiques, par les services du contrôle des narcotiques, les services de la défense civile et les comités gouvernementaux chargés de la rédaction des pharmacopées.

Mon dentiste, que j'estime beaucoup et que j'avais consulté avant de venir vous parler, m'avait suggéré de vous donner quelques renseignements d'ordre pratique sur l'emploi des médicaments en chirurgie dentaire, particulièrement sur l'emploi de ces médicaments que vous voudriez toujours avoir sous la main en cas d'urgence. Au cours de la préparation de mon texte, je me suis rendu compte que le sujet que je viens de traiter et celui que mon ami Plamondon m'avait suggéré pourraient servir à deux conférences au lieu d'une. Je m'excuse donc auprès de lui et auprès de vous d'avoir choisi de passer la tâche à un autre.

Je voudrais cependant, en terminant, vous demander de considérer le pharmacien comme un professionnel, donc un collègue, et aussi comme un conseiller et ami. Quatre-vingt-dix matins par année, à 8 heures, je passe par votre Faculté pour aller enseigner les opérations et les formes pharmaceutiques à des étudiants qui ressemblent, comme des frères, à ceux que je rencontre chez vous. Ils ont la même formation secondaire que les vôtres et leurs études universitaires sont essentiellement du même ordre. Ils ont, comme les vôtres, l'ambition de participer un jour à la prévention et à la guérison des infirmités et des maladies. Vos étudiants reçoivent des patients dans vos magnifiques cliniques; les nôtres font un apprentissage analogue dans les quelque cinq cents officines de Montréal et de la banlieue.

Le pharmacien acquiert des connaissances autres que les vôtres et qui peuvent vous être utiles. N'hésitez pas à lui confier vos patients lorsqu'ils requièrent ses services. Quand il vous arrive dans votre pratique, d'associer un médicament à une de vos belles réussites, pensez parfois que ce médicament opportun appartient à une science et que cette science est la discipline d'un professionnel, comme vous, et que le professionnel, c'est le pharmacien.

Nouvelles de l'Association

Fluoruration de l'eau de consommation

Editorial de George F. Lull, M.D., secrétaire et gérant général de l'Association médicale américaine.

"Dès qu'on suggère une nouvelle mesure d'hygiène publique, la population réagit de différentes façons. Les uns deviennent suspects, sceptiques, craintifs; d'autres s'opposent à tout ce qui entraîne une dépense; d'autres, enfin, sont systématiquement contre. Ainsi, pour être acceptée, toute nouvelle mesure scientifique doit subir le feu plus ou moins prolongé du choc des idées. Il en fut ainsi de la vaccination contre la variole, de l'immunisation contre la diphtérie, de la chloruration de l'eau, de l'addition de vitamine D au lait pour le rendre plus complet et de l'enrichissement de la farine destinée à la pâtisserie. Aujourd'hui, nous faisons face aux mêmes difficultés quand il s'agit de la fluoruration de l'eau de consommation. Des savants de renom, appartenant à la médecine, à la dentisterie et aux autres disciplines connues ont examiné les arguments apportés contre cette mesure. Et tous s'entendent pour dire que l'addition contrôlée de quantité bien précise de fluorures à l'eau de consommation pour prévenir la carie dentaire chez les enfants ne constitue pas seulement une mesure constructive d'hygiène publique, mais qu'elle ne présente aucun danger, en tant qu'il est humainement possible de s'en assurer. En tenant pour sincère l'opposition faite à la fluoruration, sans s'occuper des charlatans et des exploiters qui profitent de toutes les occasions qui s'offrent pour attaquer la science médicale et les médecins, voyons les principales objections qu'on apporte à cette mesure et voyons-y les réponses.

Avons-nous suffisamment d'évidence scientifique et expérimentale que la fluoruration est exempte de danger? Oui, cette mesure ne présente aucun danger si on l'utilise aux doses recommandées, c'est-à-dire, une partie de fluorure pour un million de parties d'eau. Plusieurs variétés d'eau renferment, à l'état naturel, une proportion plus considérable de fluor et le seul effet nocif dans les régions où on consomme ces eaux c'est l'apparition d'émail mâté dans les dents des enfants; on n'a pas cette conséquence aux endroits où l'eau n'en contient qu'une partie par million. L'organisme humain renferme des fluorures en petites quantités. Il est inutile d'accumuler sans fin des observations de laboratoire, quand on peut se servir d'une longue expérience humaine, qui constitue, en fait, une épreuve spontanée.

On dit que la fluoruration de l'eau coûte cher et que c'est une dépense extravagante parce que seulement une faible partie de l'eau fluorurée sert à la consommation; le reste sert à l'industrie, aux lavages, à la toilette, etc. . . Et de plus on prétend qu'une bien petite portion de l'eau qui est consommée sert aux enfants. On a raison sur les faits et les arguments sont vrais. Mais ce raisonnement pêche par la base. D'abord, il faudrait avoir deux sources d'approvisionnement et cette dépense serait assez onéreuse; la seule façon de fluorurer l'eau consiste à la fluorurer dans son entièreté. Et même cette façon de faire se chiffre à quelques sous par année, pour chacun des contribuables.

D'autres prétendent que les municipalités n'ont pas le droit de forcer les citoyens à absorber une médication qu'ils ne désirent pas. Cette assertion est fautive à un double point de vue. D'abord la fluoruration n'est pas une thérapeutique; cela consiste seulement à compléter la formule chimique de l'eau en teneur de fluor dans les régions où l'eau est déficiente en ces sels; ensuite, on n'est pas obligé de boire l'eau de l'aqueduc; on peut acheter de l'eau en bidons. Un aqueduc municipal s'apparente à un service de distribution de gaz ou d'électricité, c'est un service et non pas une coercition. D'une façon générale, les municipalités se chargent de distribuer l'eau par un système d'aqueduc, mais il se peut qu'une entreprise privée s'occupe de ce service, comme, il arrive en certains endroits qu'elle contrôle la distribution de gaz ou d'électricité. Un système d'aqueduc ne dépend pas nécessairement de la municipalité.

On allègue encore que la fluoruration est une mesure dangereuse parce que les appareils qui mêlent les fluorures à l'eau peuvent se déranger et rendre l'eau toxique. Depuis longtemps, on ajoute à l'eau des substances chimiques pour le rendre plus salubre et pour atténuer son goût, son odeur ou sa couleur; on a donc mis à point des machines les plus perfectionnées pour faire ce travail. Quand une défectuosité se produit, les machines s'arrêtent automatiquement; ainsi l'eau ne contiendrait pas de fluor au lieu d'en avoir trop. On dit aussi qu'on a pas de preuves évidentes que l'addition de fluor à l'eau diminue de taux de la carie dentaire chez les enfants. Des faits et des statistiques qui ont déjà été publiés ailleurs se chargent de réfuter cette opinion.

En tenant compte de notre vie démocratique, l'opinion de la majorité doit prévaloir et les adversaires de la fluoruration, quoique animés des meilleures intentions, sont en minorité, quant au nombre. Un des

facteurs du conflit qui oppose partisans et adversaires de la fluoruration est né du fait, qu'en diverses occasions, on a installé la fluoruration sans donner d'explications au public et sans obtenir son approbation, après lui avoir fait connaître les avantages de cette mesure. Ainsi la réaction suscitée par la mise en force de méthodes du genre a soulevé des protestations contre un procédé de valeur en hygiène publique.

En plus une opposition de gens sincères, qui sont animés de meilleures intentions, on rencontre les agissements d'individus, qui profitent de toutes les occasions possibles de dénigrer la science médicale et les progrès légitimes en hygiène publique. On retrouve dans le camp de ceux qui s'opposent à la fluoruration, ceux qui décriaient la vaccination et la vivisection; on reconnaît dans ce groupe des charlatans et des maniaques de toutes sortes, en résumé, tous ceux qui en veulent au progrès scientifique normal. On y soulève toutes sortes de préjugés; on va jusqu'à dire que la fluoruration est l'affaire de commerçants qui veulent écouler leurs produits chimiques et vendre leurs machines; on dit que les savants et que les dirigeants des municipalités ont été "achetés." Cette accusation ridicule ne tient pas debout quand on voit la liste d'organismes responsables qui ont approuvé la fluoruration. Parmi ceux-ci, on compte le Conseil national de Recherches, le service d'hygiène publique des Etats-Unis, l'Association of State and Territorial Health Officers, l'Association dentaire américaine, l'Association médicale américaine, l'Association américaine d'Hygiène publique et la Commission on Chronic Illness; celle-ci est entrée dans la mêlée après qu'on eut prétendu que la fluoruration de l'eau de consommation était une menace pour les personnes âgées.

On dit en outre que le fluor est du poison à rat et on obtient un gros succès avec cette trouvaille. C'est sûr, à une certaine dose, le fluor tue les rats! Mais tout citoyen intelligent, et les médecins le savent, n'ignore pas que tout médicament, même le sel de table, peut avoir des effets désastreux, si on le prend à doses exagérées.

Enfin, des adversaires peu scrupuleux ont prétendu que l'Association médicale américaine n'avait pas approuvé la fluoruration. Rien n'est plus faux! L'Association médicale américaine a signifié son approbation et n'a pas changé d'idée. Toutefois, comme il n'appartient pas à l'A.M.A. d'exercer de pression sur les autorités municipales, elle ne l'a pas fait. Mais le Conseil en Produits chimiques et pharmaceutiques de l'A.M.A. et le Conseil en Nutrition et Aliments de l'A.M.A. ont émis l'opinion officielle que la fluoruration est une mesure dénuée de tout risque.

Peut-on appeler cette attitude en endossement?"

(Tiré-à-part de l'Association dentaire américaine, 222 East Superior Street, Chicago 11, Illinois — On peut en obtenir des copies supplémentaires.)

Visites du Président.

Le président de l'A.D.C., le docteur R. R. McIntyre, a donné des conférences aux endroits suivants de l'est du Canada:

le 20 octobre—Société dentaire du Nouveau-Brunswick, à St-Jean

le 31 octobre — Association dentaire de Nouvelle-Ecosse, à Halifax

le 1er Nov. — Association dentaire de l'Ile-du-Prince-Edouard, à Charlottetown

le 3 Nov. — Société dentaire de Terre-Neuve, à Corner Brook

le 7 Nov. — Société dentaire de Stomatologie, ville de Québec

le 8 Nov. — Mount Royal Dental Society, La Société dentaire de Montréal, Montréal Dental Club, à Montréal.

Conférence fédérale-provinciale

On vient de publier les délibérations de la conférence fédérale-provinciale de 1955. Ces délibérations renferment au complet les déclarations officielles du premier ministre du Canada et des dix premiers ministres des provinces, déclarations faites à la séance d'ouverture, le 3 octobre 1955. Les autres séances furent tenues à huis-clos. Ces déclarations forment l'attitude de presque tous les orateurs en marge de la question d'assurance-santé et constituent l'exposé de la politique de leur gouvernement respectif à ce sujet.

On lira ci-après des résumés de ces discours traitant d'assurance-santé.

Le très-honorable L. S. St-Laurent
(premier ministre du Canada)

Il déclare que la question d'assurance était un des items les plus importants inscrits à l'ordre-du-jour.

"Toutefois, le gouvernement fédéral reconnaît qu'il peut y avoir des circonstances qui le justifierait d'offrir aux provinces son assistance pour leur permettre de réaliser des plans d'assurance-santé qu'elles auront établis et qu'elles administreront elles-mêmes. Depuis plusieurs années, grâce à un programme d'octrois de santé, nous avons aidé les provinces à établir un réseau complet de disponibilités sanitaires et de services de santé adaptés aux besoins du peuple canadien. Nous reconnaissons que la mise en oeuvre des ces disponibilités par un programme de santé nationale constitue, pour employer une expression de mon prédécesseur, M. King, "la base préparatoire à l'élaboration d'un système national d'assurance-santé".

On a crû que la phase qui suivrait logiquement

ment l'organisation hospitalière des centres locaux et provinciaux, toujours en conformité avec le plan national de santé, serait d'établir des services de radiologie et de laboratoires à l'usage de tous les Canadiens. Cette organisation mettrait des services experts de diagnostic à la disposition des médecins; quand ceux-ci jugeraient avoir besoin d'examen de laboratoires et de radiologie pour appuyer leurs constatations et pour les aider à prescrire les traitements".

"Le gouvernement fédéral croit qu'il pourra aider les provinces à réaliser leur programme d'assurance-santé seulement lorsqu'il aura des preuves que l'intérêt général—et non seulement des intérêts locaux—profitera de cette mesure. J'ai déjà dit, en d'autres occasions, que je crois que tant qu'une, deux ou trois provinces seulement manifesteront leur intention d'établir l'assurance-santé, le gouvernement fédéral serait mal venu de prélever des taxes de tous les Canadiens pour partager le coût de l'assurance-santé; car ces provinces ne représentent qu'une minorité de la population canadienne. Mais, si la plupart des gouvernements provinciaux représentant une majorité substantielle de la population canadienne veulent élaborer des plans d'assurance-santé qu'ils administreront eux-mêmes, sans qu'on soit obligé de modifier la constitution actuelle et sans que le fédéral s'immisce dans les affaires provinciales, s'il s'agit seulement que le gouvernement fédéral y apporte son support technique et son assistance pécuniaire, alors le fédéral serait justifié de participer à une augmentation des valeurs capitales du peuple canadien."

L'Hon. Leslie W. Frost
(premier ministre de l'Ontario)

M. Frost fit une longue revue des projets d'assurance-santé en disant que le gouvernement fédéral s'était engagé dans une politique de contribution à l'assurance-santé; que cet engagement couvrirait tous les aspects de la question et que l'Ontario, pour le moment, ne désirait que l'établissement de services hospitaliers et diagnostiques. "L'Ontario souhaite un plan national qui se réalise par phases". Il déclara qu'autant que possible la participation de la province au coût financier du projet se ferait par un système de primes. Ces propositions de l'Ontario furent présentées sous forme de rapports écrits et elles furent probablement étudiées en comité. En terminant, M. Frost suggéra qu'on forme un comité au sein de la Conférence pour étudier à fond le problème.

L'Hon. Maurice Duplessis
(premier ministre de la province de Québec)

M. Duplessis traita d'une façon générale des relations des provinces avec le gouvernement fédéral en citant des opinions émises dans le passé par des hommes d'Etat. Quoique la question d'assurance-santé était l'item général inscrit au programme de la Con-

férence, il ne fit aucune allusion directe sur ce sujet.

L'Hon. Henry D. Hicks
(premier ministre de la Nouvelle-Ecosse)

Après avoir longuement touché à la question des relations fiscales, M. Hicks déclara:

"En ce qui a trait aux services de santé et de bien-être, je désire faire savoir que la Nouvelle-Ecosse accordera toute l'attention nécessaire à l'étude des plans qui seront proposés. Toutefois, la province de la Nouvelle-Ecosse ne participera pas à l'exécution de tel ou tel plan qu'en autant que les ressources pécuniaires de la province pourront en supporter le coût, sans qu'elle soit obligée de recourir à des taux extraordinaires d'impôts. On ne peut isoler cette question du problème des relations fiscales entre le provincial et le fédéral."

L'Hon. H. J. Flemming
(premier ministre du Nouveau-Brunswick)

Sur la question d'assurance-santé, M. Flemming déclara:

"Le gouvernement du Nouveau-Brunswick endosse avec vigueur le principe d'assurance-santé. Toutefois, les provinces qui ont des revenus limités devront recevoir une assistance pécuniaire plus considérable que celle que recevront les provinces plus riches. Le gouvernement est disposé à étudier sérieusement les propositions concrètes qui seront faites au cours de cette conférence."

L'Hon. Douglas Campbell
(premier ministre du Manitoba)

A l'exemple des autres orateurs, M. Campbell fit connaître les vues de sa province sur les questions fiscales pour ensuite parler d'assurance-santé.

"Octrois fédéraux pour la santé:

Quand on traite spécifiquement de programme d'octrois pour la santé nationale, on devrait songer à donner à ces octrois un caractère plus permanent que celui qu'ils ont actuellement. Les provinces éprouvent beaucoup de difficultés à prévoir les exigences budgétaires dans le domaine de la santé, quand elles ne peuvent savoir beaucoup d'avance le montant qui leur sera alloué en octrois par le fédéral."

"Assurance-santé

Le Manitoba a manifesté beaucoup d'intérêt aux nouvelles provenant d'Ottawa ou des différentes provinces au sujet de l'assurance-santé. Nous désirons ardemment collaborer avec le reste du Canada pour étudier et discuter des projets d'assurance-santé nationale.

Nous croyons que cette question devrait s'étudier en même temps que celle des accords financiers, car la mise en force de mesures du genre aurait une répercussion considérable sur les finances provinciales et on devrait en tenir compte dans toute entente touchant la répartition des revenus".

L'Hon. W. C. Bennett

(*premier ministre de la Colombie-Britannique*)

M. Bennett définit ainsi les opinions de sa province:

"Programme de santé"

En 1945, au cours de la conférence sur la Reconstruction, le gouvernement fédéral avait suggéré un programme national de santé comprenant les services médicaux, hospitaliers, dentaires et pharmaceutiques. On ne prit aucune décision finale à cette conférence, mais ce programme a suscité dans l'esprit du public une très grande importance. Il est vrai que l'assistance publique et que la réaction et les méthodes d'application d'un tel programme varient d'une province à l'autre, mais la province de la Colombie-Britannique croit qu'il est temps d'établir un programme national de santé.

La Colombie-Britannique croit aussi qu'une province désireuse de participer à un programme de santé ne devrait pas subir le retard de celles qui ne veulent pas commencer tout de suite. Quand il s'est agi de pensions de vieillesse, le fédéral a transigé avec les provinces qui étaient prêtes pour cette mesure sociale; avec elles, il a divisé le coût de cette dépense. Le gouvernement fédéral a procédé de même pour d'autres mesures, par exemple, les octrois actuels pour la santé, et, depuis le début de cette conférence, sur les questions d'octrois contre le chômage; cette question a été réglée en principe sur une formule qui tient compte des différences qui existent dans les différentes provinces en ce qui a trait aux sommes versées contre le chômage.

C'est pourquoi, la Colombie-Britannique demande que cette Conférence s'entende en principe sur le bien-fondé d'un plan d'assurance-santé adapté aux nécessités particulières de chaque province; que ce plan renferme les services médicaux, hospitaliers, dentaires et pharmaceutiques; que le gouvernement fédéral participe au coût d'un tel programme au prorata de ce qu'une province en particulier a décidé ou décidera en regard de ses exigences particulières.

Et je tiens à vous faire remarquer, M. le Premier Ministre, qu'en 1945, le gouvernement fédéral avait offert de participer jusqu'à une proportion de 60%. Notre province, qui est une bonne partenaire, se déclare maintenant prête à participer à un programme où elle aurait à payer une proportion de cinquante pour cent."

L'Hon. A. W. Matheson

(*premier ministre de l'Île-du-Prince-Édouard*)

M. Matheson déclara franchement que pour solder les déboursés qu'exigeraient l'extension des services sanitaires contenue dans les propositions actuelles et la mise en force d'autres questions, il serait nécessaire de reviser la politique fiscale du pays. Dans sa province, dit-il, où l'agriculture tient la première place, les impôts sont rendus à leur point de saturation.

L'Hon. T. C. Douglas

(*premier ministre de la Saskatchewan*)

Après avoir parlé de la question d'impôt, M. Douglas déclara:

"Permettez-moi maintenant d'aborder la question d'assurance-santé et de bien-être social. L'assurance-santé est l'item suivant à l'ordre-du-jour. Vous connaissez tous l'attitude de la Saskatchewan sur ce sujet. C'est avec enthousiasme que nous avons accueilli les propositions fédérales de 1945, qui prévoyaient pour l'avenir l'établissement d'un système permettant à tous les Canadiens de se protéger contre les contingences de la maladie. On devait mettre en acte le plan par phases successives; les provinces seraient chargées de l'exécution du plan, en tenant compte des circonstances particulières de chaque endroit; le gouvernement fédéral devait contribuer à ce système dans une proportion de soixante pour cent.

Nous avons été fort déçus quand le gouvernement fédéral d'alors n'a pas mis en oeuvre ses propositions; il nous a dit que l'exécution d'un tel plan supposait l'adhésion du plus grand nombre des provinces à ces ententes fiscales. La province de la Saskatchewan, confiante que le plan d'assurance-santé viendrait sûrement en temps et lieu, entreprit d'organiser son propre plan d'assurance hospitalière dans tout son territoire et d'initier un programme de traitements médicaux subventionné par des impôts. A la conférence de 1950, je demandais "qu'on permette aux provinces de procéder, par phases, à l'établissement de plans d'assurance-santé, en suivant les données prescrites par les facteurs locaux. De même, à la réunion d'avril, en demandant d'insérer cette question à l'agenda de la présente conférence, je soulignais notre pensée qu'un plan d'assurance-santé complet constituait une nécessité obligatoire pour la population de notre nation. Nous n'avons pas changé d'avis et nous constatons avec plaisir que plusieurs autres provinces ont exprimé des vues semblables aux nôtres sur ce sujet.

Aujourd'hui, je crois encore qu'une assurance hospitalière doit venir logiquement en premier lieu dans l'élaboration d'un plan qui couvrira tous les aspects de la maladie. D'abord, nous avons fait l'expérience en Saskatchewan que le fait d'assurer à tous ceux qui en ont besoin des facilités hospitalières convenables et d'éliminer des comptes d'hôpital lourds à supporter est déjà un pas considérable vers la réalisation de mesures sociales raisonnables. Ensuite, tous les hôpitaux du pays accueilleraient avec enthousiasme des mesures destinées à soulager leurs difficultés financières. D'ailleurs, des esquisses d'assurances hospitalières existent déjà dans quatre provinces. Enfin, il faut souligner que la somme totale versée aux hôpitaux généraux du pays, provient dans une proportion de 54% des fonds publics et que 18% du total de cette somme totale est versée par des assurances privées. Par conséquent, un plan d'assurance hospitalière qui couvrirait tout le pays n'exigerait que le vingt-huit pour cent

qui est actuellement payé par des particuliers; ce plan d'assurance n'aurait donc qu'à financer environ ce 28%.

Permettez-moi d'ajouter que le gouvernement fédéral, en collaborant avec les provinces pour l'établissement d'un plan d'assurance hospitalière, devrait être prêt à coopérer avec toute province désireuse d'organiser chez elle un plan d'assurance médicale, sans s'occuper de l'existence ou non d'un plan hospitalier.

On pourrait établir par phases un tel programme, par exemple, en élaborant des facilités de diagnostic, de médecine générale et de chirurgie, selon les exigences particulières de chacune des provinces. Et nous croyons que le traitement des aliénés et des chroniques devrait faire partie d'un plan d'assurance-santé complet."

M. Douglas approuva la suggestion de M. Frost de constituer un comité pour étudier la question d'assurance-santé et déclara que des programmes de cette nature devraient être institués dès que la majorité des provinces serait d'accord.

L'Hon. E. C. Manning
(premier ministre d'Alberta)

M. Manning limita ses remarques à des questions de taxation. A la fin de son discours, il déclara: "Nous aurons des opinions bien définies à exprimer quand viendra la discussion de certains projets, y compris celui de l'assurance-santé." (On croit que les idées de l'Alberta sur cette question ont été exposées à d'autres réunions tenues à huis clos).

L'Hon. Joseph R. Smallwood
(premier ministre de Terre-Neuve)

M. Smallwood se borna à parler de la nécessité de développer les ressources naturelles et de la situation financière de sa province. Il n'a pas touché à la question d'assurance-santé.

Il faut noter qu'aucun premier ministre provincial ne s'est opposé au principe d'assurance-santé.

Premier dentiste au Sénat canadien
(voir livraison de novembre du Journal)

Le docteur Paul E. Poitras nous apporte des précisions sur la mention que l'Honorable Donald Smith, dentiste de Liverpool, N.E., était le premier dentiste canadien à être nommé au Sénat. Il écrit: "D'après moi, le docteur Smith est le deuxième dentiste sénateur, le premier ayant été l'Honorable Pierre Baillargeon, qui a exercé à Québec, comme médecin et dentiste. Le docteur Baillargeon, natif de l'Île-aux-Grues, le 8 novembre 1912, reçut son parchemin de médecin de l'Université Harvard, en 1840 et son diplôme de L.D.S. de l'Association des Chirurgiens-Dentistes de la Province de Québec, en 1869; de plus, il fut examinateur en pathologie dentaire pour les étudiants.

Il représenta au Sénat le comté de Stadacona de 1874 jusqu'à sa mort survenue le 15 décembre 1891".

Doyen en exercice nommé à McGill

Selon un communiqué du docteur F. Cyril James, principal de l'Université McGill, en date du 14 octobre 1954, le docteur James McCutcheon vient d'être nommé doyen intérimaire à la faculté chirurgie dentaire de cette université.

Le docteur McCutcheon, natif d'Elizabeth, N.J., a terminé ses études à l'Université McGill en 1945; il obtint aussi un diplôme de B.A. à l'Université McGill et un autre de M. Sc. à l'Université du Michigan. Il entra comme membre du corps professoral de McGill en qualité de professeur-adjoint en prothèse, en 1948.

Cinquantième anniversaire de McGill

On a célébré le 18 octobre dernier le cinquantième anniversaire de la fondation de la faculté dentaire de l'Université McGill. A cette occasion, on a tenu une collation spéciale de grades où Sir William Kelsey Fry, C.B.E., M.C., M.D.S., F.D.R.C.S., (Angl.) a reçu le titre de docteur en sciences; les docteurs Arthur Lambert Walsh, D.D.S., F.A.C.D., F.I.C.D., ancien doyen, et Frederick George Henry, D.D.S., ancien professeur, ont reçu les titres de professeurs émérites. Jusqu'à récemment, Sir William Kelsey Fry était doyen de la Faculté des Chirurgiens-Dentistes du collège Royal des Chirurgiens d'Angleterre. Il est consultant émérite au Guy's Hospital et consultant au Royal Air Force et à l'University of Health.

Le docteur Walsh a fait partie du corps professoral de McGill depuis la fin de ses études en 1920 jusqu'à sa retraite comme doyen de la faculté de chirurgie dentaire en 1948. Il a été président de l'Association américaine des facultés dentaires, de l'Association dentaire canadienne et co-fondateur du Conseil d'Enseignement dentaire de l'A.D.C.

Le docteur Henry fut nommé professeur de pathologie dentaire à l'Université McGill en 1904 et remplit ce poste jusqu'à sa retraite en 1937. Avant 1904, il était professeur au Collège Dentaire de Montréal de l'Association dentaire de la province de Québec.

Première femme nommée à un poste provincial

Le docteur Monica Mooney a été élue membre du Conseil des Chirurgiens-Dentistes du Nouveau-Brunswick, en octobre dernier. Selon toute apparence, le docteur Mooney est la première femme à occuper un tel poste au Canada. Elle obtint son diplôme de l'Université McGill en 1951 et elle s'occupe de services dentaires scolaires dans la ville de St-Jean, Nouveau-Brunswick.

Membres adhérents de la Fédération dentaire internationale

On invite les dentistes canadiens à devenir membres adhérents de la Fédération dentaire internationale. La Fédération se compose de 39 associations nationales, comptant l'Association dentaire canadienne. Comme son nom l'indique, la Fédération accomplit du bon travail à un niveau international et ses revenus lui parviennent en partie de la cotisation annuelle des membres adhérents. On sollicite actuellement les cotisations pour 1956, qui est de \$9.00 pour l'année et qui comprend l'abonnement au *Journal de la Fédération dentaire internationale* (parution, 4 fois par année). L'A.D.C. agit comme trésorière nationale pour la F.D.I. Ceux qui veulent devenir membres de la F.D.I. doivent faire parvenir leur cotisation au secrétaire, Association dentaire canadienne, 234 rue St-Georges, Toronto.

Acquisitions récentes de la bibliothèque

AMERICAN COUNCIL ON EDUCATION: Politique des collèges et des universités au sujet des projets de recherches subventionnées. Rapport du comité sur la politique au sujet des recherches entreprises dans les institutions. 1954, 95 pp.

AMERICAN DENTAL ASSOCIATION: Handbook for dentists; a speaker's guide. 1955. 43 pp. 20 fig.

BOX, H. K.: Oxygen insufflation in periodontal diseases. 1955. 94 pp. illus.

CALONIUS, P. E. B.: Statistical studies on the frequency of caries in the permanent dentition of children. 1953. 110 pp. illus.

CHEESEMAM, J. E.: Bailliere's synthetic anatomy. Part IX: Head and neck. 12 fig.

CLAPESATTLE, H.: The Doctors Mayo 2nd ed. 1954. 426 pp. illus.

FOOTE, F. W. Jr. and FRAZELL, C. E.: Tumors of the major salivary glands. 1954. 149 pp. illus.

MACDONALD, F.: For Greece a Tear; the story of the Greek war relief fund of Canada. 1954. 193 pp. illus.

McCOLLUM, B. B., and STUART, C. E.: A research report which is the first complete printed description of the science of gnathology. 1955. 123 pp. illus.

PENNELL, E. H. and PENNELL, M. Y.: Health manpower source book. Section 7, Dentists. U.S. Department of Health, Education and Welfare. Public Health Service, Divisions of Dental Resources and Public Health Methods. 1955. 158 pp.

Galvanisme buccal

Les accidents de galvanisme buccal provoqués par la présence dans la bouche de 2 métaux différents sont déjà bien connus. A. Denier attire l'attention sur les couples galvaniques dentaires engendrés non pas par 2 métaux différents mais par les alliages de différents métaux utilisés en art dentaire et notamment par l'or dentaire. En effet, un couple peut se former entre métal et salive, métal et gencive, ou métal et muqueuse. Il est d'ailleurs fréquent, avant de placer une couronne, soit de faire un habillage de la dent avec un amalgame au mercure, soit de fixer un pivot qui est rarement en platine, plus souvent en cuivre.

Ainsi se trouve formée dans la bouche une véritable micropile permanente qui, dans le cas courant d'un galvanisme de 500 millivolts et 20 micro-ampères, débitera en une année le chiffre considérable de 80 watts.

Selon A. Denier ces couples galvaniques sont à l'origine de modifications importantes du milieu humoral et créent des perturbations à distance qui, de prime abord, ne pourraient pas faire soupçonner une origine buccale, telles que névrites, hypersécrétions de muqueuses, dysphagie, eczéma, hémorragies viscérales, hyperglycémie, hypercholestérolémie, congestion de l'encéphale, etc. A. Denier a rassemblé 210 observations, dont il publie 34 particulièrement caractéristiques, d'accidents pathologiques dus au galvanisme buccal dans les domaines suivants: dermatologie, ophtalmologie, oto-rhino-laryngologie, hématologie, gastro-entérologie, neurologie, enfin hyperazotémies, hyperglycémies, hypercholestérolémies.

Signalons divers facteurs qui favorisent la micropile: emploi des antibiotiques, par voie locale ou générale, qui modifient le milieu buccal et acidifient la salive; emploi des suppositoires de bisumth; enfin explosions expérimentales de bombes thermonucléaires qui libèrent chacune dans l'atmosphère 500.000 tonnes d'acide nitrique, modifient ainsi considérablement l'ionisation atmosphérique depuis quelques années et expliqueraient l'accroissement considérable de fréquence des cas de galvanisme buccal depuis quelques années.

Au points de vue diagnostique et prophylactique, il faut noter que le pH salivaire ne doit pas être en dessous de 6,8 (normalement 7,2) et que tout potentiel supérieur à 300 millivolts entre les pièces métalliques est franchement pathologique (*Ann. Odonto-stomatologiques*, sept-oct. 1955 et *J. Radiol. Electrol.*, 1955, n° 7-8)

Nouvelles de la Faculté de Chirurgie Dentaire de l'Université de Montréal

Nouveau secrétaire à la faculté

Le docteur Jean-Paul Lussier assistant-professeur à la faculté de médecine de l'Université de Montréal et membre du Conseil de la faculté de chirurgie dentaire, a été nommé secrétaire du Conseil et assistant-directeur des études.

Il succède au docteur Gustave Gauthier, qui avait agi comme secrétaire durant de nombreuses années.

Prix décerné à un professeur de la faculté

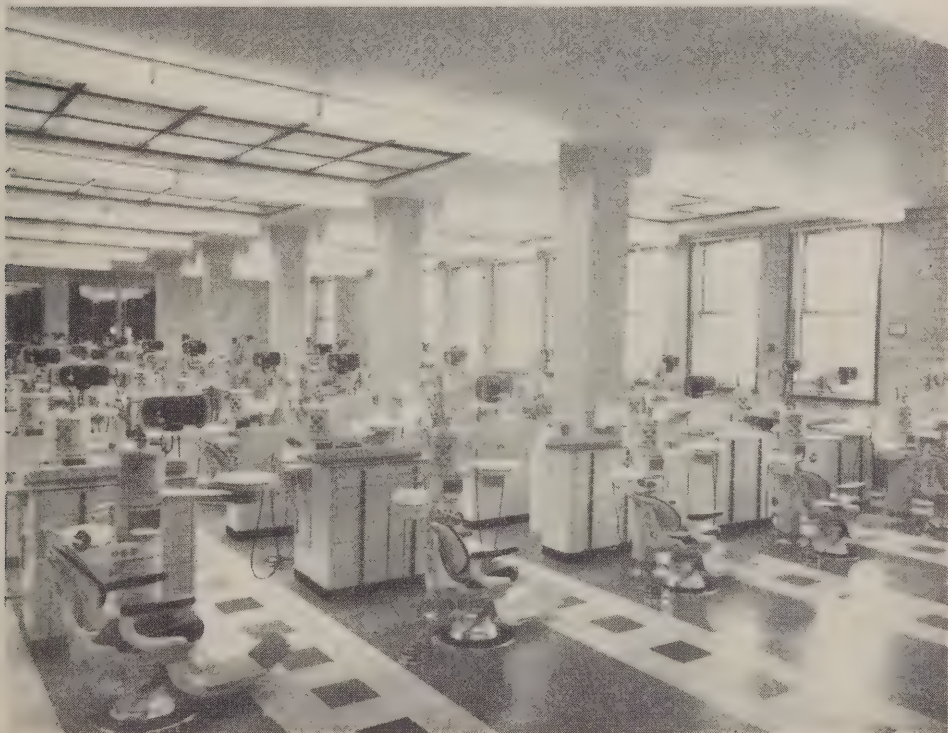
On vient d'apprendre que le docteur Georges Perreault, assistant-professeur de Pédodontie, se voit décerner le prix que la Chicago Dental Society octroie tous les ans pour le travail de recherche le plus remarquable de l'année.

Le docteur Perreault, en compagnie du docteur Harry M. Massler, avait entrepris des recherches sur "La réaction biologiques de la pulpe sous l'effet de substances obturatrices".

Ce prix de \$500 lui sera décerné au cours du Congrès de février de Chicago.

Laboratoire de recherches à la faculté

Depuis septembre, la faculté a ajouté à ses services un laboratoire de recherches où sont consultées des expériences propre à faire avancer la science dentaire. Ce laboratoire est sous la direction des docteurs Georges Perreault et Georges Pelletier. Les publications, qui émaneront de ce laboratoire, étaleront le travail accompli dans ce domaine par la faculté.



VUE DE LA GRANDE CLINIQUE

Nouvel équipement à la clinique

Durant les vacances d'été, la faculté a fait changer tout l'équipement et l'éclairage de la grande clinique de dentisterie opératoire, d'orthodontie, et de prothèse. Les laboratoires ont été munis d'installations nouvelles et partout on a changé la décoration intérieure des salles et des cliniques.

Ces améliorations, qui se sont faites à la faculté de chirurgie dentaire, rendent celle-ci digne de concurrencer les écoles d'enseignement dentaire les plus modernes. Les journaux, la radio et la télévision ont commenté ce progrès avec louanges, en félicitant les autorités universitaires d'avoir rendu l'équipement physique de la faculté de pair avec l'enseignement qui s'y donne.

Cours de chirurgie dentaire donnés aux étudiants en médecine

A la demande des autorités de la faculté de médecine de l'Université de Montréal,

le corps professoral de la faculté dentaire donnera aux étudiants en médecine une série de cours portant sur les différentes sphères de la chirurgie dentaire s'apparentant à la médecine. On croit que la faculté dentaire est la première en Amérique à donner des cours à des futurs médecins et ils ont pour but de les familiariser avec les sciences proprement dentaires.

Distinction accordée à un professeur

Le docteur Jean Nadeau, chef du service de Prothèse, vient d'être nommé membre de l'American Denture Society.

Cette société ne groupe que des spécialistes en prothèse dentaire et, pour en faire partie, il faut s'être distingué dans le domaine de la prothèse, soit par l'enseignement, les recherches, les publications, etc.

Prise d'empreinte en déglutition

La prise d'empreinte pour prothèse partielle au niveau du maxillaire inférieur n'est pas toujours commode car, contrairement à ce qui se passe pour le maxillaire supérieur, il n'existe à ce niveau plus de points d'appui et par ailleurs le procédé courant de prises d'empreinte sous pression risque de ne pas donner un moulage exact des parties à appareiller ce qui explique la fréquence des corrections de statique que l'on a à faire dans l'élaboration de ces prothèses partielles.

L'idéal serait donc une prise d'empreinte sans pression, celle-ci peut être facilement réalisée par la prise d'empreinte par déglutition qui est seule à pouvoir donner un moulage mandibulaire qui tient compte des actions musculaires.

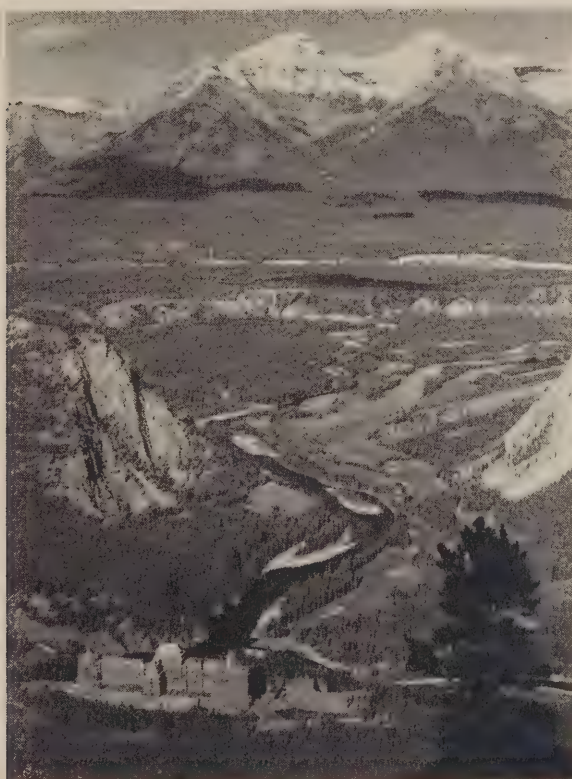
CONGRES NATIONAL
de l'Association dentaire canadienne
conjointement avec l'Association dentaire d'Alberta
à l'Hotel Banff Springs, à Banff, Alberta
les 3, 4, 5, et 6 juin 1956

Conférenciers:

DR ARNEF ROMNES — Chef du service de dentisterie opératoire, Université Northwestern, Chicago.

DR H. M. WORTH — Autorité reconnue en radiologie, Vancouver, C.B.

DR SIDNEY T. WILLIAMS — Prothèse dentaire, Université de Washington, Seattle, Washington.



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Des dentifrices.

par GUY GABOLY

Conclusions de l'Auteur

Que conclure de pratique et d'immédiatement utilisable de cette revue des dentifrices? On doit à la vérité de reconnaître que, depuis la guerre, les fabricants ont approvisionné le marché de produits de qualité qui, pour la plupart, se valent, et conviennent à la majorité des individus sains. Dans les cas pathologiques, il appartient au Praticien de prescrire avec discernement tel ou tel produit de préférence à un autre ou à l'exclusion de tout autre: c'est ainsi que dans l'halitose il conseillera un dentifrice à la chlorophylle, dans la fragilité capillaire, un produit chloruré sodique, dans les stomatites chroniques une pâte pénicillinée ou discrètement arsénisée. En cas de mylolyse, de caries du collet ou de fragilité adaman-tine, les liquides sont prescrits à l'exclusion formelle de toute substance abrasive. Bref, la gamme des produits est assez riche et variée pour permettre un large choix dans la spécificité de l'action recherchée ou à éviter.

A la faveur de ce rapide tour d'horizon des connaissances actuelles sur les dentifrices, on ne saurait que déplorer l'échec des recherches quant à la découverte d'une substance d'élection apte à satisfaire à l'expérience capable *in vitro* comme *in vivo* d'augmenter la résistance à la carie, les incompatibilités pharmacodynamiques, les écueils physico-chimiques à abattre et enfin le facteur "prix", regrettable, mais non négligeable, on se fera une idée des difficultés des chercheurs à trouver l'expérience princeps qui imposerait infailliblement tel ou tel produit.

Depuis deux ans, le Northwestern University a commencé un travail sur les effets de 381 composés quant à la formation d'acide sur les "plaques". Ce travail, long et nécessitant l'épreuve du temps,

est dirigé par Fosdick, Calandra, Blackwell et Burelé et s'attache à déterminer parmi 381 composés réputés actifs contre les "plaques", ceux qui sont capables de demeurer actifs plusieurs heures dans la prévention de la formation d'acides à partir des sucres, qui soient atoxiques, incolores, agréables au goût et de prix abordable.

Les mesures se font dans des conditions apparemment identiques, plaques relevées sur la face proximale de dents non cariées, chez des sujets dont le pH buccal est inférieur ou égal à 5,2, 30 secondes après rinçage avec une solution de glucose à 50%. Pour qu'un agent thérapeutique soit valable, il faut qu'après une semaine d'usage (brossage matin et soir), les plaques n'atteignent pas une acidité ionique de 5,5 au moins.

C'est ainsi qu'une dizaine de produits sont actuellement retenus et sont en cours d'études *in vivo*. Parmi ceux-ci le dihydroacétate de sodium, semble promettre des merveilles.

Tous les espoirs semblent permis dans cette laborieuse recherche du produit éminemment valable qui s'imposerait de lui même, mais le problème n'est-il pas trop lié à nos connaissances actuelles du problème de la carie, toutes théoriques pour ingénieuses qu'elles soient. En d'autres termes, si nos idées sur la carie sont sujettes à caution, la recherche d'un produit spécifiquement anti-carie s'avérerait, par voie de conséquence, stérile, à moins que, par une de ces conjonctions miraculeuses dont la recherche scientifique est de temps en temps le théâtre, la découverte fortuite d'un produit dentifrice idéal ne nous donne la clé du problème initial, l'étiophysio-pathologie du processus carieux dentaire. (*Q.S.*, 6 vol. VI, 1955, pp. 371-377).

Acrylic incline plane*

by J. J. SCHACTER, D.D.S., Saskatoon

The prevention of a severe and disfiguring malocclusion, is one of the many preventive services that the general practitioner can render to his young patients. The lingually displaced maxillary incisor is a condition frequently observed in children from six years of age, after the permanent incisors have erupted. This condition should be corrected as early as possible, and is one which, (although primarily a Paedodontic, or Orthodontic problem), can be easily corrected by the use of an Acrylic Incline Plane.

ETIOLOGICAL FACTORS

The most common cause of this lingual occlusion is the prolonged retention of the deciduous teeth. These over-retained teeth may be ankylosed to the alveolar process, resorption of the root is at a standstill while the permanent teeth erupt and are deflected. Root fragments, or tips in the path of the erupting teeth often cause

deflection. Supernumerary, or supplemental teeth are factors which should not be passed over lightly. Deficiency of arch length per se, or deficiency due to overly large teeth will crowd the laterals lingually. Irregularity of eruption, especially premature eruption of the cuspids may force the laterals lingually. When both centrals are deflected lingually, there is closure of the space available for the laterals, and frequently these are displaced palatally.

EFFECTS

The lingually displaced maxillary teeth are aesthetically unsatisfactory. The psychological factor early in life is not important, but increases as the child grows older. Abnormal pressure against the lower anterior teeth can cause severe gingival inflammation with rapid recession of the supporting labial plate. The tongue, in these cases is crowded by the lingually positioned maxillary tooth (or teeth), and its various actions push these

*Read before the Western Canada Dental Society
—June 1955.

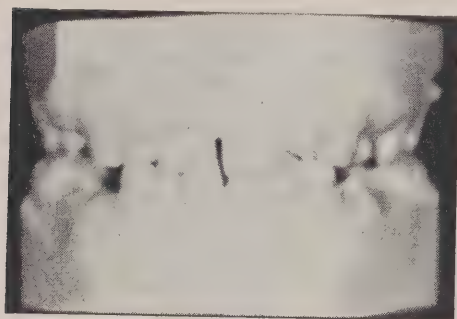


FIGURE 1

teeth labially, only to be forced back by the occlusion of the teeth. This jiggling action quickly causes such severe trauma to the gingival tissue, resorption of the labial plate, and danger of losing the lower anteriors is great. The scissored upper (Fig. 1), causes much greater trauma to the lowers, than those whose full labial surfaces are caught lingual to the lowers. (Fig. 2) Freedom of movement of the mandible is impaired while this condition exists. As the child is only able to bite in one position, he becomes a chopper, with the resultant loss of proper function. The mandible may be forced labially. This forward positioning may become conditioned to such an extent that it can become permanent throughout the life of an individual if the crossbite remains. The forward positioning of the mandible, and the lingual positioning of the maxillary teeth do not allow normal occlusal relationship of posterior teeth. This further leads to crowding and blocking out of cuspids, or bicuspids. Malrelation of occlusal surfaces of the teeth eventually leads to a deterioration of the supporting tissues.

The condition is rarely self correcting, due to the position of the teeth and the fact that when biting the tooth is continually being forced into its malposition.

The most opportune time to effect correction is during the eruption of the tooth, when the correction can be accomplished by finger pressure, or by the use

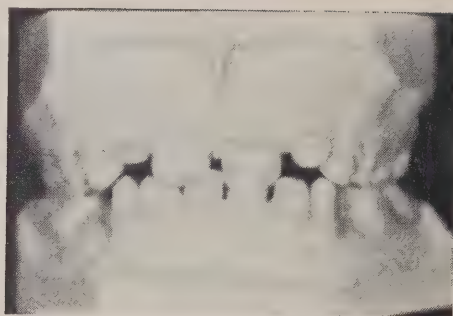


FIGURE 2

of a tongue depressor, or paddle. If the tooth is locked upon presentation it should be corrected as soon as possible by means of an appliance.

TREATMENT PLANNING

1. Radiograms and Record Models:

Radiograms must be taken prior to any correction of this nature. These pictures will immediately tell us that the root area is normal and free of root tips, fragments, or interfering supernumerary teeth.

Record models are to be taken and kept as a permanent record of the case. They are useful in determining whether the space available is adequate, and help in assessing the amount of movement and difficulty that may be encountered during treatment.

The width of the space in the arch must be adequate for the malposed tooth. Calipers are used to carefully measure the space available, comparing it to the width of the tooth. If the space available is inadequate, this must be enlarged prior to bringing the tooth into position.

The simplest method to use is indicated by the degree of arch deformity and anticipated patient co-operation. The method that is selected should suit that particular case. Patient co-operation is usually fair, and increases with the age of the patient. A tooth that is erupting lingually can be brought over by the use of a tongue blade, whereas, a tongue blade is useless where the overbite is great.

(a) The bite plane or incline plane, is an appliance which can be made of various materials and may be of the fixed, or removable type. The fixed type is made to fit over the lower anterior teeth, and is cemented to place. The disadvantage that this has over the removable is that it must be removed and recemented if any major change occurs. It can be cast metal, or made of acrylic. The removable type is the more universal appliance. It is made to cover all the lower teeth so that if difficulty is encountered, and the patient is required to wear the appliance for a week or more, there will be little danger of elongation of the lower posterior teeth. It may be removed and adjusted outside the mouth. It is considerably larger than the fixed appliance, and is more stable. Details of the uses and construction of this type of appliance will be shown later.

(b) The trimming of the deciduous teeth can of course only be done in younger patients who present a crossbite. If a crossbite is discovered it should be freed by judicious grinding of the cusps of the offending teeth. The occlusion should be made free of all interference, although nature originally placed cusps on the deciduous teeth, these are normally worn smooth by four or five years of age, so that in the majority of the cases, all the patient will need for this correction is the elimination of one or two interfering cusps that have not been worn smooth.

(c) The other methods of treatment will vary with the case on hand. Orthodontic appliances may be used, such as an upper lingual arch with finger springs; a labial arch with bands or ligatures, a Hawley type of appliance with finger springs and a variety of others too numerous to mention. An orthodontic appliance should not be used until simpler methods have proved unsuccessful, or if the case presents a general malocclusion and the correction of the linguo-misplaced anterior is only one part of the malocclusion.

The elimination of the active etiologic factors has usually been accomplished by the time the patient is seven. It is wise to check on the habits of the child and all abnormal ones discouraged. The radiograms taken will show any causes at the root area and these are to be eliminated prior to commencement of treatment.

ACRYLIC INCLINE PLANE

The Acrylic Incline Plane is a simple appliance which will correct one or more

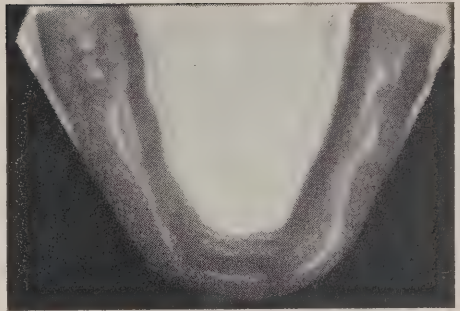


FIGURE 3

lingually malposed teeth. It is simple to construct and may be made by the operator in a dental office with little effort.

The quick curing of bench curing acrylic, although not as strong as the heat treated acrylic, possesses adequate strength for the Incline Plane. This material is preferred as it causes no trauma to the teeth. Its ease of handling makes it an ideal material.

The Incline Plane may be constructed in various designs. By utilizing all the surfaces of the clinical crowns of the mandibular teeth, it is possible to construct an Incline Plane which is secure and stable, and which does not have to be cemented to place. This allows the plane to be removed for adjustments as the case progresses. Covering the occlusal surfaces of the lower teeth lessens the danger of opening the bite.

An impression of the lower mouth is taken and poured in either laboratory plaster, or a mixture of 3 parts plaster and 1 part stone. An all stone mixture is not recommended. The model should be approximately 1½ inches in thickness, and trimmed not closer than ½ inch from the teeth.

One thickness of red wax is softened and pressed lightly over the surfaces of the teeth (Fig. 3). No special effort is made to follow the contours of the various surfaces. The excess wax is trimmed to the gingival edges. Two additional pieces are then placed on the lingual from cuspid to cuspid for additional strength.

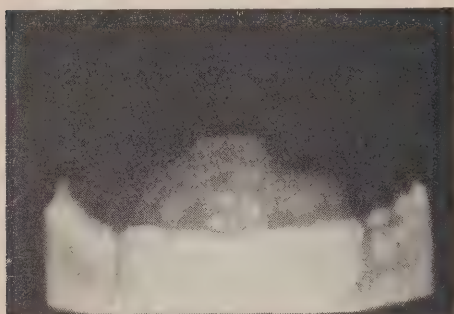


FIGURE 4

The position of the malposed tooth is noted. The incline is then placed by adding two thicknesses of wax from a base which extends to the centres of the adjacent teeth (Fig. 4). It is inclined incisally and lingually at approximately 60 degrees.

The pattern may then be removed from the model and tried in the mouth. If the indirect method is to be used, the record upper is used. The incline will vary in height with the overbite of the malposed tooth. At all times, care must be taken to ensure that the posteriors will not come in contact until the tooth has been corrected. This will enable the patient to maintain constant pressure. The direction, or angulation of the labial surfaces should be continuous with the lingual surfaces of the maxillary incisors. The incisal edge of the plane should not be wider than the malposed tooth and should engage the incisal edge along the entire width at all times, unless the tooth is to be rotated. Slight rotations can be accomplished by having the plane meet the lingually rotated surfaces at first contact. (Fig. 5, 6).

The wax pattern is then sealed on the model along the entire gingival margin. The lingual of the plane is filled in with wax for additional strength. The surfaces are flamed smooth to decrease the finishing process.

The model is then prepared for flasking, and processing. The buccal, labial and lingual sulci are filled with plaster to the

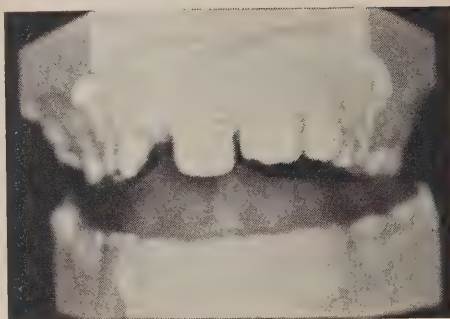


FIGURE 5

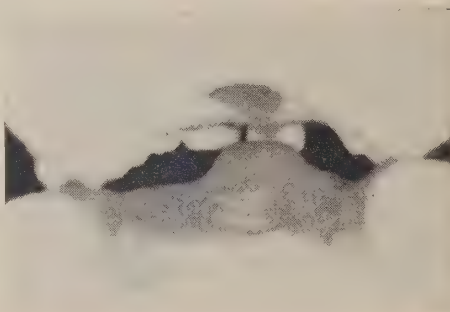


FIGURE 6

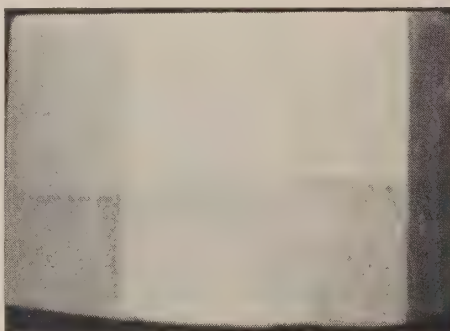


FIGURE 7

edge of the wax pattern, eliminating all undercuts. The model is then thoroughly soaped, and a counter die is poured over the wax pattern to approximately the same thickness as the original model. Care should be taken that the die does not extend down the sides of the model. After the initial set of plaster, it is trimmed to conform to the edges of the model. (Fig. 7) The heat generated by the plaster

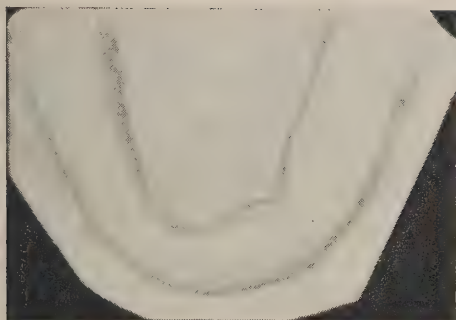


FIGURE 8

is sufficient to warm the wax, and the two halves of the plaster flask are easily separated.

The wax pattern is eliminated by hot water, or by prying on the sealed edges. The danger of tooth breakage is held to a minimum as the wax was not closely adapted when the pattern was made.

The two halves are then painted with acrylic foil. A mix of any quick curing acrylic, either clear or pink, is taken and placed in the negative half of the flask. (Fig. 8) The positive is then dipped into warm water, and the two halves are pressed gently to place. If excess acrylic oozes between the halves of the flask, they are separated and the excess removed. Final sealing is either done by hand, or by a small flask press. Gentle pressure is used to avoid fracturing the plaster flask.

The plaster flask may be immersed in hot water which will cure the acrylic in a few minutes, or it may be left to cure at room temperature. During the processing no additional pressure is needed if hand pressure has been used.

The finishing of the plane is accomplished by the usual method of trimming and polishing the edges. The surfaces of the plane will seldom need polishing if the proper procedure has been followed.

The appliance is then ready for insertion. It should "click" into place with a minimum amount of fitting. A definite blanching should be seen when the patient exerts pressure on the malposed tooth.



FIGURE 9

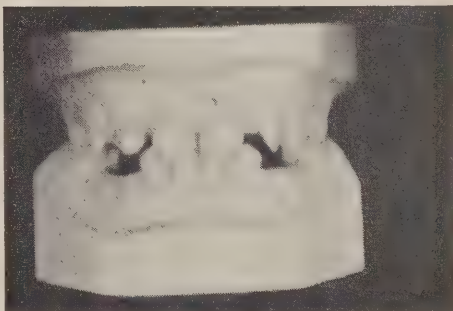


FIGURE 10

As the tooth moves labially, the incline moves up on the lingual. To avoid impinging on the lingual tissues, the excess should be trimmed from time to time.

The patient is instructed to wear the plane constantly, removing it only for cleaning after meals, and when the teeth are brushed. Constant pressure is necessary so that the labial movement is continuous. (Fig. 9, 10)

The technique and use of the acrylic incline plane is one which can be made and used successfully by all general practitioners. He can render a great service to the patient in this way. The early correction can avoid the case turning into a complex Orthodontic Problem.

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Saskatoon

The treatment of pulps of deciduous and young permanent teeth*

by HAROLD C. WITTICH, D.D.S.*, Minnesota

In the presentation of this subject I realize that I am presenting a very controversial one. However, after many years of clinical experience I have found that the pulps of many deciduous teeth and young permanent teeth if properly treated can be retained in a healthy condition.

There are three reasons why the pulps of these teeth should be treated. First, to keep in a healthy condition the deciduous teeth until they are normally shed. Second, to prevent the premature loss of a deciduous tooth with possible resulting malocclusion. And third, to give the child proper mastication surfaces during this early period.

In doing pulp therapy for these two types of teeth, there are two important things to consider. First, proper diagnosis, and second, proper technical procedure. There are four phases of pulp involvement that I wish to discuss with you. First, deep seated cavities; second, pulp capping; third, pulpotomies, and fourth, pulpectomies. Let us first consider the deep-seated cavities.

DEEP SEATED CAVITIES

A. Without Pain

The child presents himself with a very deep cavity causing no pain except when chewing. Radiographic interpretation shows the cavity very deep. Clinical examination and removal of the caries will also reveal a very deep cavity. Remove all of the soft caries and hard caries until at the point where exposure might be possible. Precipitate ammoniacal silver nitrate with eugenol. Place in the cavity a base of zinc oxide and eugenol or oxy-

phosphate of zinc cement and place a permanent filling.

B. With Pain

Generally the child has had some pain with this tooth over a period of a week or two, most frequently at the time of mastication. Remove all of the soft caries, much of the hard caries, and precipitate silver nitrate with eugenol. Place over this a filling of zinc oxide and eugenol. *Dismiss the patient for a period from four to six weeks.* After which time the patient has returned, remove this portion of the zinc oxide and eugenol still present and all of the black precipitation which was previously caused by the silver nitrate. Reprecipitate with ammoniacal silver nitrate, put in a cement base of zinc oxide and eugenol or phosphate of zinc cement and a permanent filling.

However, if during this four to six weeks waiting period the child complains of pain, there is a possibility that the caries has proceeded to the place where the pulp has been involved and in those cases, a pulpotomy or a pulpectomy should be performed.

CAPPING

Our second consideration will be capping of the pulps of these teeth. Let us first consider the important points of diagnosis.

A. History of Pain

Pain should not be of over two weeks' period, not an intermittent pain, and the only pain *possible* would be at the time when the child masticates his food.

B. The Size of the Exposure

The exposure should not be over 1 millimeter in size or that a sharp end of a small explorer can be placed into it.

*Presented at the Conference of the Western Canada Dental Society.

**Head, Dept. of Dentistry for Children, University of Minnesota.

C. Number of Exposures

There should be only one exposure and then the size as previously described.

D. Haemorrhage and Pain

At the time of the exposure there should be severe pain; also, a good haemorrhage, which should stop very quickly.

E. Calcified Areas

There should be no calcified areas present in the pulp chamber as evidenced from radiographic interpretation.

With all five of these conditions favorable pulp capping can be done either to the deciduous tooth or to the young permanent tooth. The procedure is as follows:

Finish the cavity preparation immediately. *Isolate the tooth by use of rubber dam* (or cotton rolls and holder) and remove all caries which might still be present. Toilet the cavity with alcohol and phenol using a 60-40 solution. Then place over the exposure on the proximal surface of the deciduous tooth a material called *Kwikap*. The formula for *Kwikap* is 3 drams of calcium hydroxide, 6 drams of zinc oxide, and 27 grains of iodoform powder. The liquid consists of 1 part of 40% phenol and 2 parts of eugenol. The *Kwikap* is mixed to a creamy consistency and with an explorer or a small instrument a small amount is teased over the exposure. It will serve not only as a capping material but a cement base as well. Should the exposure occur on the occlusal surface of a deciduous tooth I would recommend that a small amount of *Kwikap* be placed over the exposure and then a cement base be placed over that.

With all permanent teeth regardless of where the exposure may occur on the occlusal or proximal surface, it is best first to use a small portion of *Kwikap* and then place over that a cement base. The reason we do not use cement over the *Kwikap* on a proximal surface of a deciduous tooth is because there may

not be sufficient room to insert your amalgam filling.

Kwikap, as I have previously stated, serves both as a capping material and as a cement base. If you are one who uses an automatic mallet to place your amalgams, I would recommend that you use a small amount of *Kwikap* over the exposure on the proximal surface of a deciduous tooth and then place in a cement base. However, if you use just normal hand pressure there is sufficient amount of strength in the *Kwikap* to resist the pressure you may exert in the placing of your amalgam in the deciduous and permanent tooth.

We have capped over 600 deciduous teeth in our Children's Department, Dental Clinic, University of Minnesota, in the last six and a half years and during that time we have had over 90% successful treatment. By successful treatment we mean routine checkup by clinical and radiographic interpretation.

PULPOTOMY

Our third consideration is pulpotomy. Let us now take up the diagnosis as we did previously at the time of capping.

A. History

There can be a history of pain of not over two to three weeks of time, not an intermittent pain and chiefly a pain at the time of mastication.

B. Size of the Exposure

If the size of the exposure is over one millimeter.

C. Number of Exposures

If more than one exposure occurs, regardless of size, or position.

D. Haemorrhage and Pain

A good haemorrhage should result at the time of the exposure and also some pain. At this point there is a possibility that the sharp end of the explorer may

be placed into the pulp a distance of 1 or 2 millimeters before the pain can be felt.

E. *Calcified Areas*

No calcified areas should be observed in the pulp chamber, as evidenced by radiographic interpretation.

With all five of these conditions present, pulpotomy can be performed. The procedure is as follows:

First, anaesthetize the tooth; lower, mandibular, upper by infiltration. Isolate the tooth either by the use of a rubber dam or cotton rolls underneath the ivory clamp. We do not use in this case a cotton roll holder because if the cotton rolls become saturated with saliva it is necessary to remove the entire cotton roll holder. But by placing the molar ivory clamp on the tooth upon which you are going to do your pulpotomy or the one distally to it if the tooth is present, then you can very easily remove a cotton roll on the buccal or the lingual as each one becomes saturated with saliva.

Instruments to be used should be sterilized either in alcohol or any disinfectant that you care to use. The field is then disinfected by (a) iodine first, (b) followed by alcohol.

The removal of pulp is done in two ways, either with a large spoon excavator or a large round bur. I prefer the latter method. A large round bur is taken and placed in the contra-angle and the roof of the chamber is then removed, and the pulp in the chamber automatically removed at the same time. With good sharp spoon excavators remove the debris which might be present in the chamber. Stop your haemorrhage by using sterile cotton. Sterile cotton can be prepared by placing a small piece of cotton in a piece of gauze. Place several of these in a tin can and then put them in the oven at home and have them baked at 200° for a period of 1 to 2 hours. This will give a

sufficient amount of sterile cotton to dry and absorb the haemorrhage and the debris which always results in the removal of the pulp in a pulpotomy.

Next we place over the root stubs a preparation of calcium hydroxide mixed with distilled water or if you do not have distilled water, you may use local anesthesia liquid. A small portion is picked up on an amalgam plugger, placed over the exposure, and tapped into place. At this point I generally take a small piece of sterile cotton placing it over the calcium hydroxide and exert a little pressure; first, to absorb any moisture which might still be present in the calcium hydroxide and second, to place the calcium hydroxide in contact with the root stubs.

If in the case of a permanent tooth where a dentine bridge may occur due to the application of the calcium hydroxide, then I want the calcium hydroxide in contact with the root stubs. By packing it down tightly is one way that I believe that we can encourage the formation of the dentine bridge. Only one-half of the pulp chamber is filled with the calcium hydroxide. A cement base is then placed over the calcium hydroxide, the cavity is finished, and an amalgam filling is inserted immediately.

I do not perform a pulpotomy for a permanent tooth when the root is fully formed. I believe in those cases a pulpectomy will give better service. The reason is because in a young permanent tooth or deciduous tooth the root not being fully formed allows for better drainage and the large vascular system affords better recuperative power to the remaining pulp.

We have had about an 87% successful treatment of pulpotomies of deciduous teeth and 92% successful treatment of permanent teeth at our Children's Clinic in the last six years. Our evidence of success is based upon our clinical and radiographic observations, i.e., *follow-up*.

PULPECTOMY

Our fourth consideration of pulp treatment is pulpectomy. This is the point where we reach the most controversial portion of the presentation of our subject on the treatment of the pulps of deciduous and young permanent teeth. Here as before correct diagnosis and technical procedures are the determining factors of success.

At the present time I believe all deciduous teeth with abscess or previous signs of abscess should be extracted. There is a condition, however, of an infected pulp of a deciduous tooth that I believe can be successfully treated. That is the putrescent type of pulp.

Clinical examination would reveal that the cavity is very deep with the possibility of an exposure. Radiographic interpretation would be the same. Upon the removal of the caries one will drop right down into the pulp chamber and there is no sensation in the tooth. The radiographic interpretation shows no rarefaction in the bifurcation or root ends and all that is present is a painless tooth with a putrescent odor. These types of *deciduous* teeth, I believe, can be successfully treated.

First, remove the debris which might be present in the pulp chamber. Place into this a small piece of cotton saturated with formocresol solution, absorbing most of it so that it may be rather dry, sealing it with cement or gutta percha. Leave this for a week to ten days. When the patient returns, isolate the tooth. Remove the previous treatment and ream out the canal. Depth of reaming should be determined by radiographs and sensation of pain expressed by patient. You will find it rather difficult sometimes to ream out the canals of the deciduous teeth because of the many ramifications which are present in the roots of the deciduous teeth. Then place another piece of cotton saturated with formocresol into the pulp chamber as previously, sealing again with

cement or gutta percha. Leave this for a period again of one week to ten days.

When the patient now returns for the third time, isolate the tooth. Remove the previous dressing and if there is no odor of putrescency, then this pulp chamber and root canals can be filled. If on the other hand, there is a putrescent odor, then place in another dressing of formocresol as previously.

Should it be that there is no odor present procedure is as follows to fill the root canal. Mix a solution of zinc oxide and eugenol and place in this one drop of formocresol. Mix it to a creamy consistency. Then place it into the root canal either with a reamer or a canal file working it down the best you can. You must realize that the use of eugenol makes the material rather slippery and rather difficult to work into the root canals. After working it in the best you can, fill the entire pulp chamber with the mixture and then take a piece of temporary stopping and a large amalgam plugger exerting pressure in the direction of the roots. Exert pressure until the patient complains of pain and stop.

There is a possibility that you may overfill these canals but this you need not worry about for zinc oxide and eugenol mixture is readily absorbed and will cause no damage to the tissues.

It is not necessary to fill any portion of the pulp chamber with the mixture. All we wish to do is just fill the root canal. After the canals have been properly filled a cement base is then inserted into the pulp chamber and an amalgam filling is inserted.

I realize that this is not an aseptic technique and may cause quite a bit of discussion. However, if the procedure is carried out and the diagnosis is made as previously stated, I am quite sure that these teeth can be successfully treated.

It has been our experience again in the Children's Dental Department, Dental Clinic, University of Minnesota, in the past ten or fifteen years to treat a large

number of these teeth and our successes have been about 54%. Again we are basing our interpretation upon clinical examination and upon radiographic interpretation as the patient has returned from time to time.

Again I wish to emphasize the important points in the treatment of the pulps of these deciduous and young permanent

teeth. First is the diagnosis; watching carefully that all diagnostic conditions are present, and second, all the technical procedures described are definitely carried out. If so, I am quite sure that you can have just as much success, if not more, in the treatment of the pulps of these deciduous teeth and young permanent teeth as we have had.

Mandibular prognathism

by ALBERT A. ANTONI, D.D.S., M.S.D.* and REYNOLDS A. ERICKSON, D.D.S.**

A Case Report—

Prognathism is a facial-skeletal growth problem, manifested by an overgrowth of

the mandible. The interference with growth may be due to several factors. Heredity is probably the most important, but the authors also strongly suspect that improper muscle physiology may be involved.



FIGURE 1

Photograph taken preoperatively to show profile. Note prominent lower lip and elongated lower jaw.



FIGURE 2

Taken three months postoperatively. Note improved facial contour and lines. Compare with Fig. 1.

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**Department of Orthodontics, Faculty of Dentistry, U of T.

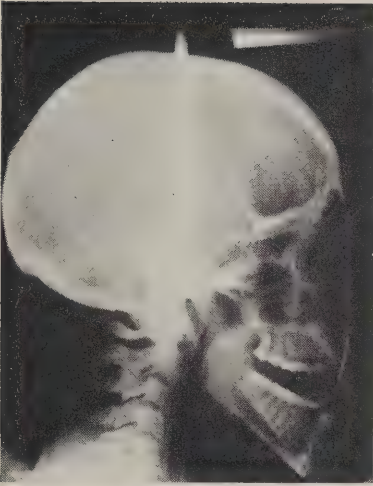


FIGURE 3

Lateral skull and jaw film taken pre-operatively. Note elongated and over-developed mandible.

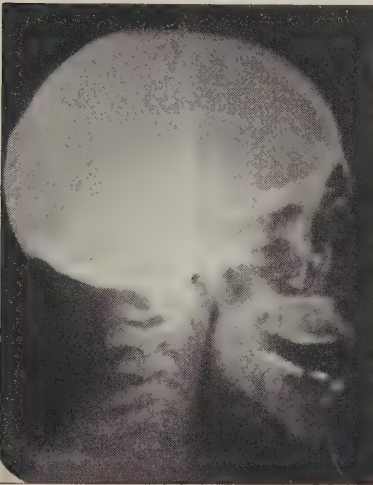


FIGURE 4

Same view as shown in Fig. 3 but post-operatively. Note shortening of mandible and more normal lines.

At puberty there is actually a spurt of growth, and the patient may then become embarrassingly conscious of his affliction.

The lower one-third of the face including the lower lip is abnormally prominent, while the middle third including the upper lip appears under-developed. This combination gives a lantern jaw "or exaggerated Dick Tracy" profile.

The abnormal jaw relationship and occlusion produce osteoporosis due to lack of function and traumatogenic occlusion (refer to Figs. 5 and 6.)

These mouths are naturally more susceptible to dental caries and periodontal diseases. They tend to become edentulous early and then present prosthodontic difficulties.



FIGURE 5

Intra-oral photograph taken in centric occlusion to show open bite and protrusion of mandibular teeth. Note that maxillary cuspids rest disto-lingually to the mandibular first bicuspid.

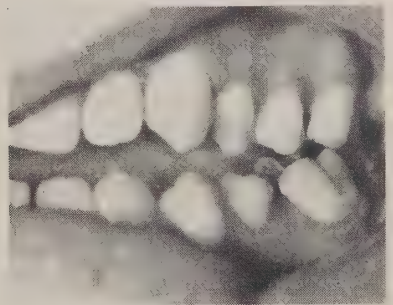


FIGURE 6

Preoperative intra-oral photo to show number of occlusal contacts when jaws are in centric.



FIGURE 7

Preoperative film showing the extent of protrusion to be 5mm and the presence of the overbite.



FIGURE 8

Postoperative film showing improved relationship of jaws and teeth. Note the figure 8 wiring of the mandibular fragments.

Function is markedly impaired and presents a severe personal handicap. An over sufficient bolus of food is always being swallowed and this results in continuous strain on the swallowing mechanism. Patients that present with an open bite, as well as the over-developed mandible experience difficulty handling foods that have to be bitten off. In the case to be forthwith presented the patient was wont to protrude his tongue and grasp the object to be bitten off between the protruded tongue and his upper teeth.

Clinical experience has demonstrated that severe cases of this type are best treated by surgical intervention with subsequent orthodontic correction. The optimum time for surgery is after the mandible has stopped growing. All our cases are done after the twentieth year.

The prognosis of these cases is excellent. This is especially true when they are handled by dentally trained personnel, who possess the specialized training necessary to carry the case through to completion.

The case here presented is unique in that the patient is himself a member of

the dental profession. The surgery was done in two stages. The first intra-orally and the second extra-orally two weeks later. During the interval the orthodontic appliance now described and illustrated in Figs. 9 and 10 was constructed and adapted into place.

The lower 1st molars were extracted in preparation for the resection of the mandible in this area. About one week later stainless steel bands were fitted to the lower second bicuspids and lower second molars—namely the teeth approximating the mesial and distal of the sections of bone to be resected on each side.

A lower impression was taken with Kerr's Red Compound with the bands in place on the teeth and a stone model constructed with the bands in position.

Round gold tubes, .040 inside diameter, were soldered to the bands on the model. The two tubes on each side were held in accurate alignment by a wire during the soldering and the alignment was made as close to the gingival as possible to clear the archwire from the occlusion.

The archwire used was gold and was constructed in three parts:—

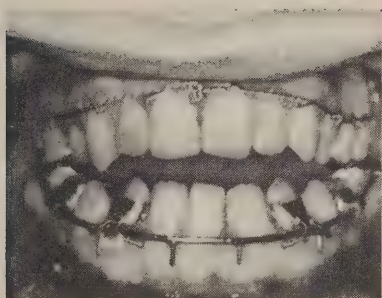


FIGURE 9

Preoperative photo showing Risdon type arch in upper jaw and appliance described above adapted to lower jaw.

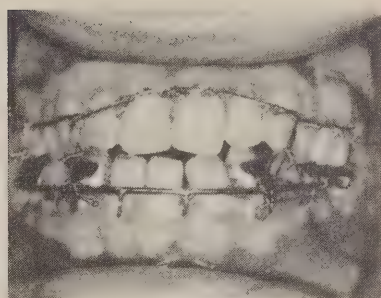


FIGURE 10

Immediate postoperative photo showing appliance in use and jaws immobilized with intermaxillary wires.

1. One .038 anterior section which terminated at the distal of the bicuspid tubes.

2. Two .032 distal sections soldered to the .038 wire which extended the archwire beyond the distal of the 2nd molar tubes. The smaller gauge of wire used in the distal sections was to avoid binding of the wire on the tubes on manipulation during surgery.

Gold lugs were now soldered to the anterior section of the archwire to be used for ligatures in immobilizing the jaw after surgery.

Six days after the first appointment the 2nd molar and 2nd bicuspid bands retained on the archwire were cemented into place as a unit. Two additional bands were constructed and cemented on the cuspids. These had .026 gold wire attachments soldered on the labial for wrapping around the archwire and holding it in position.

The size and shape of the bone segments to be removed were determined by placing plaster models of the arches in centric relationship and drawing lines through the mesio-buccal cusps of the maxillary right and left first molars and extending them to the lower cast. The lower cast was then moved distally and placed in the position of optimum occlusion. Similar lines were then drawn on the

lower cast again through the mesio-buccal cusps of the maxillary molars. The lower cast now had two lines on the right and left sides respectively and the distance between each pair represented the width of the bone sections to be removed. To compensate for the open bite the sections were made slightly wider at the superior than at the inferior borders. Metal templates were cut to correspond to the size and shape of the bone sections to be removed and these were used as guides throughout the surgical procedures now to be discussed.

The first or intra-oral stage of the operation was done as an office procedure employing local anaesthesia with intravenous barbiturate sedation. The lower right and left molars were removed, and the predetermined sections of the alveolar bone were removed on both sides to just above the inferior dental canal. The flaps were then returned to place and sutured with black silk.

The final stage was done two weeks later at The Doctor's Hospital, Toronto, under general anaesthesia. Sodium pentothol intravenously and a nitrous oxide-oxygen mixture administered via an endotracheal tube were used. A two inch incision was made beneath the shadow of the mandible and the dissection carried

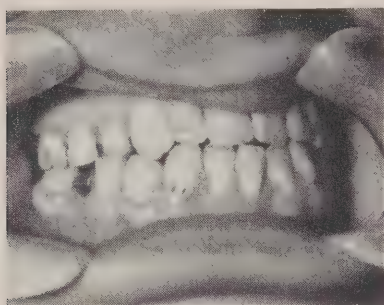


FIGURE 11

Showing case as it is now. Compare with preoperative occlusion shown in Fig. 5.



FIGURE 12

Showing incision scars after 3 months.

down through the skin, subcutaneous fascia, muscle and periosteum. The external maxillary artery and facial vein were identified, clamped, cut and tied off with silk. All small bleeders were tied off with 000 cat gut. The removal of the remaining bone was then effected with drill and chisel.

The wound was not compounded intra-orally and the nerves and blood vessels were not severed. A pouch was drilled into the marrow space of the body of the mandible so that when the anterior segment of the jaw was repositioned there was space to accommodate the inferior dental nerve.

The fragments were then wired together by utilizing two stainless steel ligatures crossing each other in a figure 8 fashion. Stainless steel gauge #26 wire was used (Figs. 4, 8).

The wound was closed in layers, using 000 cat-gut for the muscular and fascial layers and medium black silk for the skin. Intermaxillary fixation was applied and all necessary precautions for immobilized jaw patients instituted.

Except for the expected swelling and discomfort the post operative course was uneventful. The patient was discharged on the third post operative day. The sutures were removed on the sixth day and the intermaxillary wires and arch appliances after five weeks. During that time, special attention to oral hygiene and to the maintenance of the appliances was carried out weekly.

On removal of the appliance some occlusal correction was done and this was followed later by more accurate spot grinding by a periodontist.

Fig. 11 below shows the occlusion as it is now and orthodontic treatment is now being planned to procure even better teeth positioning and occlusion. It is to be noted that a lower incisor is missing but this was lost years previously and the space had closed per se.

The external excisions if placed correctly leave very insignificant scars and Fig. 12 shows these at the third post operative month. There was a post operative parathesia of the lower lip but this has now disappeared.

The object of experimental science is "to discover the laws of natural phenomena, for the purpose not of foreseeing them but of regulating them at pleasure and mastering them."

Claude Bernard,
Journal of Oral Surgery, January 1956.

Fibrosarcoma of the mandible

by WILLIAM W. BRESLIN, D.D.S., Toronto

A Case Report

History: March 5, 1952

Mr. Lorne B. a married school teacher age 32, was examined at this office for advice concerning an open socket which had failed to heal. He reported that pain in the lower left bicuspid region forced him to consult a dentist, who extracted the left lower second bicuspid on December 26, 1951. He indicated no grave concern over his condition, but did complain of colds, coughing and pain on movement of the chest at times. There were no startling details disclosed about his history at this time.

CLINICAL EXAMINATION

There was a slight swelling in the bicuspid region of the left mandible, the buccal plate being extended towards the cheek. Ulceration was present in the socket which was filled with a jelly like granular tissue. Profuse bleeding accompanied exploration of the area. There were no enlarged glands in the neck. A localized osteitis was suspected, and preparations were made to operate the area immediately.

RADIOGRAPHIC EXAMINATION

Intra-oral film disclosed a triangular shaped rarefied area in the jaw extending from the first bicuspid to the first molar. It narrowed as it approached the lower border of the mandible. (Fig. 1).

SURGERY

Under mandibular block anesthesia, the area was thoroughly curetted and packed with $\frac{1}{2}$ inch iodoform gauze. The tissues were loosely sutured with black braided silk.

On March 10, 1952 as the sutures were removed, the granular consistency was noted, and curettage was again performed under block anesthesia. A biopsy was

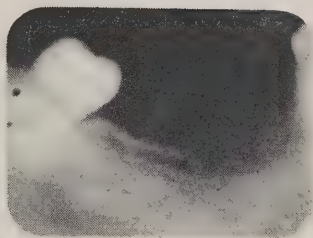


FIGURE ONE
March 5, 1952

ordered for all removed tissue, and an external lateral radiograph was made of the jaw. (Fig. 2).

BIOPSY

It was with some surprise that a diagnosis of fibrosarcoma was received. As the involvement seemed quite limited in the jaw, response to radiation seemed possible, and arrangements were made to admit patient to the radium clinic of the hospital. To facilitate treatment radiographs were made of the chest, as a routine procedure.

CONSULTATION

The chest report disappointed the radiologist and the therapeutic department of the hospital. Since areas existed in both lungs of grape fruit dimensions, the lesions were considered metastatic, far beyond any help from radiation or surgical interference. It was considered pointless to examine the patient, but our combined opinion decided that the best interests of the patient and his family would be served, by at least a pretense of treatment to retain morale.

TREATMENT

When patient was advised that pathology report had been received, he sug-

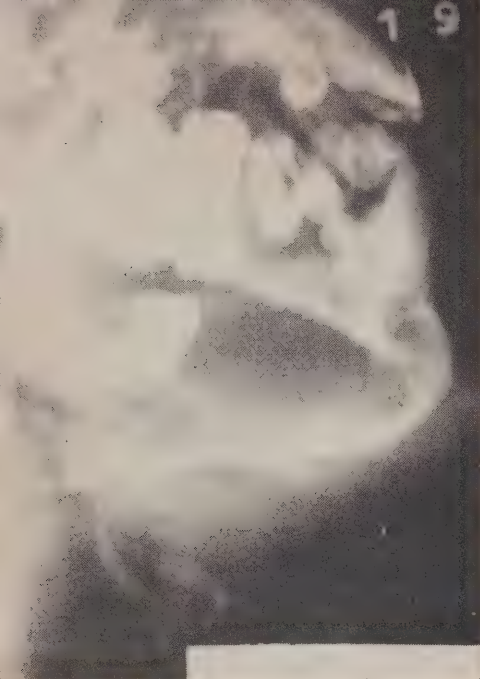
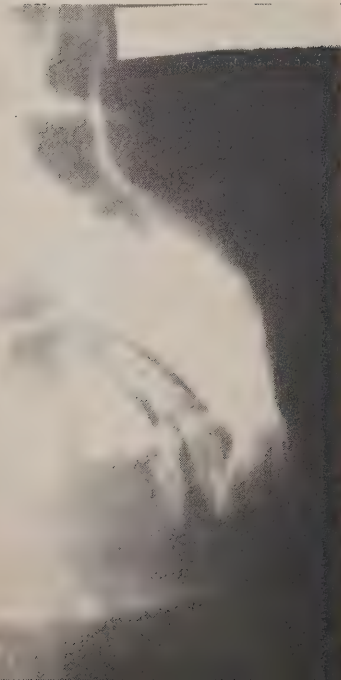


FIGURE TWO
March 10, 1952

FIGURE THREE
May 19, 1952



gested that it might prove to be fibrosarcoma. Further questioning revealed that in April 1949 he had a lump removed from his thigh at Sunnybrook Military Hospital which was diagnosed as fibrosarcoma. He also admitted routine radiographs taken of his chest by a mobile clinic in November 1949.

An examination of the radiographs taken by the clinic on November 7, 1949, indicated them to be half the present dimensions. The report from Sunnybrook verified the lump on the thigh as fibrosarcoma. Our conclusion therefore was that the lesions in the jaw and the chest were secondaries, and should not be subjected to radiation unless there was danger of pathological fracture, or severe pain in the jaw.

The patient was advised of the concern regarding his chest, and this excuse was offered for the delay about surgical interference. He was under the impression that his lungs were becoming tubercular and suggested that he would feel better when the warm weather arrived. However his wife was informed of his grave condition, and was prepared for a life expectancy of a very few months.

In the meantime the patient was under the impression that conservative treatment was being followed. He was observed in the office weekly and radiographed to note changes, and to give the impression that the case was progressing. The hospital clinic also examined him and took further radiographs for comparison. On May 19, 1952 they reported "bone involvement on the left side of the mandible body, with extension of sun-ray formation of new bone into the soft tissues beneath the mandible". Clinically the lesion in the mouth was ulcerating and extending towards the symphysis. (Fig. 3).

During all this time the patient's spirits were excellent. He directed plays and

choir practices with optimism, and took great pride in his garden at home.

On July 4, 1952 the patient was examined for the last time. Ulceration was still present in the jaw although the swelling was reduced. A new mass was noted in the occipital region of which the patient was unaware. There was a further glandular mass in the lower left cervical chain measuring $2\frac{1}{2}$ cm. in diameter. The patient was fully aware of this but stated that it had not increased. He was satisfied with his progress.

CONCLUSION:

When it became obvious that the life expectancy of the patient was very short when examined in the hospital on March 13, 1952, his physician was advised. He reported that the patient lost weight and became so weak that he was put to bed during the last part of June. Occasional sedatives were given for the relief of pain, and the patient finally succumbed on July 16, 1952.

206 Bloor St. West,
Toronto, Ont., Canada

Supernumerary, mandibular, impacted bicuspid, compound composite, odontome

by GEORGE A. MORGAN, D.D.S., Toronto and WILLIAM K. PRENDERGAST, D.D.S., Toronto

—A Case Report

PROBLEM:

Orthodontic refer, Male, Age 24.

Roentgenograms, consultation and diagnosis. Pain over distribution of left mandibular inferior alveolar nerve.

EXAMINATION FINDINGS:

ROENTGENOLOGIC:

Figure 1—Two mandibular, left, supernumerary, impacted bicuspid with an inter-posed, compound composite odontome.

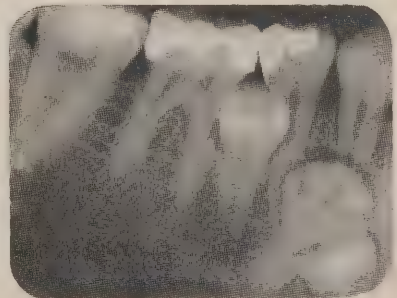


FIGURE 1

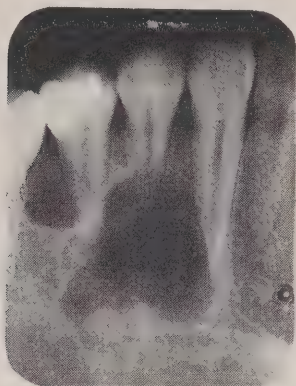


FIGURE 2

CLINICAL:

Negative with the exception of a slight lingual bulge indicating lingual version of impaction. Patient advised of possible parathesia of lip.

OPERATIVE TREATMENT:

Local anaesthesia. Pre-operative medication.

Surgical removal of two lingually impacted, mandibular, left, supernumerary bicuspid and the inter-posed, compound, composite odontome.

Lingual flap operation, bone removal, sutures.

POST-OPERATIVE TREATMENT:

Post-operative medication.

Figure 2—Illustrates removal of two mandibular, left supernumerary, impacted bicuspid and the inter-posed compound, composite odontome.

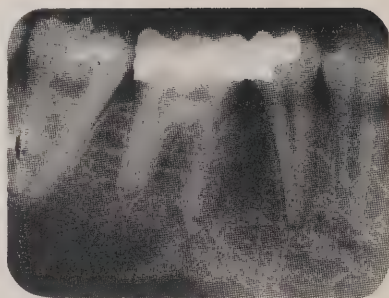


FIGURE 3

UNUSUAL IMPACTIONS

Figure 3—Post operative x-ray, 18 months.

Illustrates filling in of bone structure from region of previously removed two mandibular, left, supernumerary, impacted bicuspid and the inter-posed, compound, composite odontome.

Permanent teeth have retained normal colour and vitality. No history of lip parathesia, trauma or pain.

COMMENT:

This case is of interest chiefly because of the various pre-operative orthodontic diagnosis, all of which suggested the removal of at least one of the permanent mandibular, left bicuspid. This case is unusual because of the findings of two mandibular, left, supernumerary, impacted bicuspid with a compound, composite odontome, inter-posed.

170 St. George St.
Toronto.

ABSTRACTS

Enzyme inhibitors as a factor in the control of dental caries.

by L. S. FOSDICK, Ph.D., Chicago.

The Journal of the American Dental Association, January 1956.

If effective dentifrices are so few and in general unsubstantiated by check experiments, why then does nearly every major dentifrice manufacturer claim anti-enzyme activity for his product? It is only necessary to view television, listen to the radio, or read dentifrice advertisements to learn that almost every dentifrice today has enzyme inhibitors present that will stop acid formation, decrease the microbial population and make it unnecessary to brush after each meal. Actually, it is true that most dentifrices contain enzyme inhibitors, but most of these inhibitors are not retained in the mouth or on the tooth surface for more than 20 to 90 minutes. With or without an inhibitor, one brushing with a dentifrice will decrease the microbial population of the mouth by millions of organisms, but the effect is ephemeral. Hence, most of the ads do have some basis of truth; all dentifrices, when properly used, will decrease the microbial population of the mouth, but only for a short period of time. Many dentifrices will decrease acid formation in a test tube, but only a few will prevent acid formation on the tooth surface for many hours after use.

The most likely application of enzyme inhibitors for the control of dental caries has not been tried on human beings. If an inhibitor could be found that could be in-

corporated directly into the sugar or confection, no acid could be formed from that sugar or confection. This, from the theoretical point of view, would be an ideal method of caries control.

There are two major objections to this method of control, however. In the first place, any substance that will inhibit glycolysis in the mouth will also inhibit glycolysis in muscle tissue if the inhibitor gains access to the vascular system in high concentrations. This is not a problem in the dentifrice field, but in the food industry may be of major importance.

The second objection is of less serious consequence. The inhibitor would prevent fermentation in any sugar in which it was present. Thus, the sugar would be unsuitable for any process dependent on fermentation.

In summary, it can be stated that, from a theoretical point of view, the use of enzyme inhibitors is very attractive. From a practical point of view there are many factors that make the application of the theory extremely difficult. In animal experiments, at least ten enzyme inhibitors have been used successfully in the control of dental caries. In human experiments, penicillin, high urea-ammonium combinations, sodium N-lauroyl sarcosinate, sodium dehydroacetate-sodium oxalate combinations and tyrothricin have been suc-

cessfully used in dentifrices with statistically significant results. In similar experiments, the low urea-ammonium combinations and procaine penicillin failed to reduce caries activity significantly when used in dentifrices.

Of all those tested on human beings,

only one—that with the low urea-ammonium combination—has been checked by two independent investigators. Thus, it would seem that enzyme inhibitors may be used for the control of dental caries, and as knowledge increases, new applications in dentistry may be expected just as in the other biological sciences.

Variations in the efficiency of bitewing roentgenograms as related to age of patients.

by JAMES M. DUNN, D.D.S., MPH and HERMAN De WILDE, M.D., D.M.D., Boston.

The Journal of the American Dental Association, February, 1956.

A series of observations among young people from the age of 12 to 23, most of them in the high school system in Newton, Mass., the rest in the U.S. Naval Reserve in New York and in Lasell Junior College, Newton, has been used to study the influence of posterior bitewing roentgenograms on caries experience observations at different ages.

The count of DMF teeth rose slightly at all ages as a result of the use of the roentgenographic examination, but the increases were somewhat larger at age 17 than before or after. Counts of decayed teeth rose more sharply. Counts of filled teeth dropped, as new caries observations necessitated shifting some filled teeth to the column for decayed teeth to avoid double listing. Counts of missing teeth remained unchanged.

A sharp rise in the count of new carious surfaces resulted from the use of the bitewing roentgenogram. These increases were significantly greater at age 17 than before or after. This peak in the efficiency of the bitewing roentgenogram coincides with the sharp peak in the need for fillings between ages 15 and 19 recently demonstrated by the American Dental As-

sociation. Other studies have shown a low point in the efficiency of the bitewing roentgenogram at the period of the mixed dentition, around age 11.

The average increase in new carious surfaces produced by the use of one pair of posterior bitewing roentgenograms was 4.91 for the entire survey group and 7.01 for the 82 patients aged 17. These data demonstrate the importance of bitewing roentgenograms in surveys to determine the dental needs of young people. Without this aid, many persons with early proximal lesions of caries will feel they have no dental needs at all and will not seek treatment. The idea that bitewing roentgenograms are needed only for research purposes must be revised.

The peak of efficiency seen at age 17 suggests the great public health value of bitewing surveys of eleventh grade high school children.

Sixty-two per cent of all the new carious surfaces found in the entire survey would have been found even if explorer examinations had been omitted. This percentage varied in relation to the age of the patient and reached a peak at ages 20 and 21, at which ages 72 per cent of all

lesions that were observed appeared in the bitewing roentgenogram. Only 39 per cent of the total observations for these ages were made by explorer. This situation suggests certain conditions under

which public health dental examiners might screen for dental caries by bitewing roentgenogram alone, provided they do not omit examination of the patient for conditions other than caries.

Selective grinding versus surgery.

by C. H. BLANCHARD, B.S., D.D.S., Los Angeles, California.

The Journal of Prosthetic Dentistry, January 1956.

The success or failure of a partial denture may well depend upon how well the preliminary steps were accomplished. These are: (1) diagnosis and treatment planning, utilizing to the fullest the dentist's own reservoir of knowledge and experience, the roentgenogram, the vitalometer, and the use of accurate study casts; (2) education of the patient through the use of study casts and x-ray view box; (3) intelligent survey of each partially edentulous arch, both before mouth preparation and after; and (4) carefully planned and executed mouth preparations, utilizing cast restorations

wherever indicated, again with full use of the surveyor properly to contour wax patterns that will serve best to support and retain the finished appliance.

It is only through intelligent planning and competent executing of the many steps in the construction of a partial denture, in conjunction with the intelligent and informed cooperation of the patient in the maintenance of the appliance and the supporting teeth, that the partial denture can serve as more than a prelude to full mouth extractions, and become a respected device for the restoration of lost dental functions and the preservation of the remaining oral tissues.

Crown and Bridge Restorations in Periodontics

by ALLISON G. JAMES, D.D.S., Beverly Hills, California.

The Journal of Periodontology, January 1956.

The life of a fixed bridge may be considered as a continual contest between load and abutments. A successful bridge is one in which the balance is always in favor of the abutments.

The most effective and best tolerated method of interattaching multiple abutments at the end of a bridge span has been found to be the long dowel and

socket. Normally the dowel should be upon the mesial surface of the most posterior abutment, inserted into the socket on the distal of the next anterior abutment, and progressively forward in that manner. Similarly, one end — the anterior end of the fixed bridge in the posterior part of the mouth — is most effectively attached by means of a long dowel in the

adjacent supporting abutment. A small, right-angled or acute-angled setscrew may be inserted through the abutment casting into a depression in the male dowel if further rigidity is required. If for any reason it appears advisable to place the male dowel on the anterior of a pair of adjacent abutment teeth, then in all probability the setscrew should be employed. The use of this device allows minute but imperceptible movement of the individual abutment teeth. Experience over a number of years indicates that this method encourages periodontal health of the individual teeth, and at the same time allows more conservative cavity preparation than might otherwise be the case.

The load to which a bridge is subjected is governed by the opposing forces. Obviously, those forces which would be exerted through the medium of an opposing full denture would be markedly less than forces which would be exerted by sound, natural teeth opposing. Broad, flat occlusal surfaces greatly increase the load during the masticatory process, whereas anatomically carved occlusal surfaces properly articulated with opposing normal

anatomical forms minimize the vertical pressures required in mastication, and only after complete contact of the opposing dentition is the full load exerted.

The load to which a bridge is subjected is modified by the length of span, the buccolingual diameter of the pontics, as well as that of the abutment castings, and the occlusal form, both of pontics and abutments.

Leverage exerted upon a bridge is a very important consideration. Steep cuspal inclinations, or over-anatomized carvings with opposing long cusps of either natural or artificial teeth, increase the leverage if there is any interference. In the absence of cuspal interference it would appear that the more effective shearing quality of the apparatus on the bolus of food offsets the potential increase in lateral leverage.

Deviation of the bridge restoration from a straight line between the two primary abutments is an important cause of leverage occasionally overlooked. Judgment will dictate the limits opposed in a given case.

Prevention—the Earmark of a Profession.

by CARL L. SEBELIUS, D.D.S., M.P.H., Nashville, Tenn.
Journal American College of Dentists, December 1955.

Prevention is the earmark of a profession—the profession of dentistry. Many questions are still unanswered. Confusion exists in determining the best approach to adequate preventive dental service. The blocks which prevent the public from seeking adequate preventive service and which prevent some dentists from providing the best preventive measures need careful study. How can false claims made

on radio, television, and in paid advertisements of the newspapers, which confuse the population, be combatted? It is known that many people are not motivated to seek adequate dental service. How can the public be made more aware of the importance of dental health? More must be learned as to how the dental profession can promote preventive programs and see to it that more dental public health pro-

grams are developed and expanded. People need to be motivated to accept established dental facts.

Other areas of preventive dentistry which offer a challenge to the profession are indices for determining the prevalence of periodontal disease, prevalence of oral neoplasms and social science studies which would point up the methods and

procedures of motivating dentists as well as the public to practice known preventive procedures.

One of the objectives of the American College of Dentists is to improve public understanding and appreciation of oral health service. Is the profession facing the challenge of a changing world and making prevention the earmark of the profession?

Transplantation and reimplantation of teeth.

by HORACE M. MILLER, A.B., D.M.D., Portland, Ore.

Oral Surgery, Oral Medicine and Oral Pathology, January 1956.

Upper and lower third molars can be transplanted to freshly prepared first molar sockets in the same patient and will continue to grow. The roots develop so that the tooth becomes a useful member in the dental arch.

Care in selecting cases is important. A favorable age and favorable mouth will improve results expected.

There is only a limited application for the transplantation of third molar teeth. The wholesale transplantation of teeth in one mouth or reconstruction of an entire edentulous jaw cannot be done at this time. The public must be kept from expecting these results.

Interest in transplantation of teeth has aroused interest in various associated problems, such as the establishment of tooth banks, the consideration of blood types in transplantation, and calcium

metabolism. Of interest also are the regeneration of the dentinal nerve, changes in pulp tissue, and enamel, dentine, and cemental growth. A better knowledge and understanding of bone reaction to transplants and implants is desirable.

Many types of root canal fillings have been tried before reimplanting teeth. A wide range of methods for sterilizing the tooth have been experimented with, but the ultimate method has not been developed as yet.

Records at this time seem to indicate that the cases that have been most successful had no correlation to the most meticulous methods of sterilization.

Some reimplanted teeth functioned over thirty years, while in some others the roots disintegrated within five years.

We do not know, as yet, enough about transplanting or reimplanting teeth and are just beginning to learn.

The difficulties of providing for the entire Nation certain types of health services now purchased by the upper income group appear insuperable. Take dentistry as an example. The number of dentists required to provide adequate dental care for all the citizens of the United States is staggering; the cost of such care on a public basis would be so large as to be beyond the possibility of the taxpayers' supporting. The only real answer to dental caries therefore lies in the realm of preventive medicine. The research worker and the development man (the dentists concerned with public health) must find an answer in terms of preventing the decay of teeth. As you know, there are already a few promising signs in this direction.

Conant, J.B. *The inter-relation of pure and applied science in the field of medicine. Perspectives in Medicine, the March of Medicine, 1948*, New York, Columbia University Press, 1949.

HOSPITAL DENTAL SERVICES

What service should dentistry render in our hospitals?

A dental service is primarily for the diagnosis and removal of infection in the systemically ill patient. Although the theory of focal infection has long ago fallen by the wayside, it is a well proven fact that the removal of secondary infections such as diseased teeth, tonsils etc., improves the patient's response to medical treatment and thereby shortens his stay in hospital. Therefore, all medical admissions should have a dental examination as soon as possible.

The dental service should provide a twenty-four hour emergency service. This is an obligation that we have to the public, it also provides a service to our private patients when we are not available. Such a service is not difficult to arrange in the smaller centres. The training of the nursing staff in the emergency department is necessary so that they may determine what is a dental emergency, thereby eliminating unnecessary calls.

All maxillo-facial injuries should be examined by a member of the dental staff as well as by a surgeon. The dental staff

must assume responsibility for the treatment of injuries involving the dental and associated structures.

The diagnosis and co-operative treatment of malignant lesions of the mouth is an important service rendered by the dental department. Oral surgery, the construction of radium molds and the prosthetic restoration of lost tissues are services well rendered by the dental department.

The dental service is responsible for the teaching of dentistry to the nurses in training. The teaching of dental radiology, anaesthesia, dental disease in relation to ophthalmology and otolaryngology and dental infections in relation to medical and surgical problems to post-graduate medical students is another responsibility of the dental service.

The oral cavity is a part of the human body and therefore disease here cannot be ignored any more than anywhere else in the body; its ramifications are similar and just as serious. To provide an overall health service a hospital must have a dental service and to provide this service, dentists in the community must share the responsibility.

The advocacy of the fluoridation of communal water supplies reflects the application of the highest principles of ethics. Time and again the question is raised why the dental profession will so strongly advocate a measure which potentially reduces the incomes of the dental practitioner. The answer is obvious only to the professional man, for the duty of every professional man is to put himself out of business—the dentist to eradicate dental disease, the physician to prevent the diseases which harass mankind and the lawyer to keep his clients out of court. The situation in industry is different. The automobile industry does nothing, and properly so, to prevent the wider use of automobiles. This is the difference between a trade and a profession. Unless this difference is understood and applied in dental practice, the basis for sound practice management or administration will not have been found.

Practice administration today and tomorrow.

By Donald H. Miller, D.D.S., Elmira, N.Y.

The Journal of the American Dental Association, February 1956.

CONVENTION HEADLINES
PLAN NOW TO ATTEND THE JOINT MEETING OF
THE CANADIAN DENTAL ASSOCIATION
AND
ALBERTA DENTAL ASSOCIATION
BANFF **JUNE 3-6, 1956**



The convention will feature many outstanding Canadian and American Essayists which will include:

- Dr. Arnef Rommes:** Head of Department of Operative Dentistry, Northwestern University, Chicago, Ill.
- Dr. H. M. Worth,** Noted Canadian Authority on Dental Radiology, Vancouver, B.C.
- Dr. Sidney T. Williams,** Prominent Clinician on Prosthetic Dentistry, Washington University, St. Louis, Mo.
- Dr. Alton W. Moore:** Head of Department of Orthodontics, University of Washington, Seattle, who will deliver the Grieve Memorial Lecture. He will also present a paper to the Orthodontists attending the meeting.
- Dr. Frank Martin:** Crown & Bridge Department of the University of Toronto will present the première of his film "Crown & Bridge Procedure".

An essayist will be provided by the Oral Surgery Section.

There will also be many and diverse Table Clinics.

THE ROYAL CANADIAN DENTAL CORPS ASSOCIATION

IS ARRANGING A GET-TOGETHER — BY WAY OF AN INFORMAL COCKTAIL HOUR —
OF ALL FORMER AND PRESENT OFFICERS OF THE CORPS AND DENTISTS WHO
ARE VETERANS OF OTHER SERVICES, AND THEIR LADIES.

NORTH FAIRHOLM ROOM — JUNE 4, 1956, 6-7 p.m.

TICKETS MAY BE PURCHASED AT THE REGISTRATION DESK.

EDITORIAL

Guidance for a career in dentistry

One of the great needs of any professional group is a continuous augmentation and replacement of personnel by individuals who have not only been prepared academically but have acquired those attitudes of mind which are mandatory for successful professional attainments. By the time an applicant is ready for his university career, most of the moral or ethical values of life should be well established in his character. True, there are exceptions — but by and large an individual who has not developed a certain sense of social consciousness and social responsibility by the time he embarks upon a course of professional study under university discipline, is unlikely to change greatly prior to his entry into private practice. The selection then, of suitable candidates for dentistry is a vitally important responsibility.

Previous academic attainments have long been recognized as a basis upon which standards may be set. It is encouraging to know that in certain educational centres diligent attention is at present being directed toward measurements in the more abstruse or intangible consideration of character development as it relates to an awareness of social responsibility. Admission committees at our various faculties make sincere attempts to appraise not only the candidate's scholastic fitness for his course of study, but try as well to assess the applicant on the basis of his character development.

The profession can assist in the culturing of suitable candidates for admission into dental schools. Undoubtedly a high school student who has been made aware

of the many and varied aspects of the profession, the attendant responsibilities, the nature and importance of the services rendered, the qualifications necessary for entry and success, the educational preparation needed, the opportunities for advancement and the advantages and disadvantages of the profession will be well fitted mentally for the tasks which await him. On the other hand the student whose only knowledge of the profession and what it means is embodied in his own personal experiences when he has received dental treatment, may be approaching a career for which he is completely unsuited.

Most secondary schools now have extensive guidance programs. Such programs present an opportunity for the dental profession to offer counsel and advice to prospective students of dentistry.

How can a dentist make his knowledge and experience available for this important task? There are two methods which may be employed. The guidance officer in the school may direct an individual who has indicated an interest in the dental profession to a dentist who has expressed a willingness to serve as a counsellor. This personal approach will permit the counsellor greater insight into the character of the student than will the other type of approach which necessitates meeting a relatively large group of students at one time. A counsellor is often able to ascertain whether or not the student exhibits those attitudes of mind which augur well for successful professional achievement.

Much effort has been expended by vari-

ous groups in the preparation of material which may be utilized for guidance work. Each dentist should avail himself of this information and be prepared when the occasion presents itself to function as a guidance counsellor. If on the other hand no guidance program exists in the area in which he resides, then the dentist's initiating efforts may well be responsible for the development of ideal local candidates for the dental profession.

Let us look for a moment at some of the main considerations which should be embodied in any discussion of dentistry as a career. Some brief attention should be given to the history of the profession and the importance of dentistry to everyday life. The nature of the work should be considered, giving brief explanatory references to the various facets of dental practice. Most students are aware of the environment of a typical dental office, but may not be cognizant of the hours of practice or the pressures of an appointment schedule.

The qualifications necessary for entry and success are many in number but should be given emphasis in order to

permit the student to make a critical self-analysis. The nature and costs of the courses to be undertaken are important as well as the schools which are accessible.

A discussion of the various opportunities not only in practice but in public health, teaching, research, military service, and administration, should ensue. The various advantages and disadvantages of the profession should be discussed frankly as should the remuneration to be received. This latter consideration is important but it should be pointed out that one does not enter a profession with the prime object of making a large amount of money. One joins a profession because he believes that he will enjoy his work, that he will be providing a much needed service and making a contribution to mankind, and that he will be worthy of the respect of his fellow men.

The task of preparing students for a course in dentistry does not belong to the schools alone. The members of the profession, who after all, are in the best position to give sound guidance to these matters, should assume certain responsibilities for maintaining a continuous supply of suitable students.

The Library

Additions

- AMERICAN DENTAL ASSOCIATION: Accepted Dental Remedies. 1956. 206 pp.
- BUDIN, Dr. J.: La prothèse provisoire dans la réduction et la contention des fractures et fracas du maxillaire inférieur. 1954. 90 pp. illus.
- DRILL, V. A. Ed.: Pharmacology in medicine; a collaborative textbook written by 81 authorities. 1954. (about 1200 pp.)
- GINESTET, G. et MERVEILLE, L.: Le traitement chirurgical des fractures des maxillaires; indications, techniques. 1955. 132 pp. illus.

- GRAY, K. G.: Law and the practice of medicine. 1955. 133 pp.
- JOHNSON, A. L.: Dentistry as I see it today. 1955. 54 pp.
- LEVY, I. R.: A textbook for dental assistants. 4th ed. 1955. 293 pp. illus.
- O'MEYER, R. X.: Valeur de la croissance relative en hauteur des procès alvéolaires chez l'homme. 1954. 91 pp. illus.
- SOGNNAES, R. F.: Oral health survey of Tristan da Cunha. 1954. 145 pp. illus.
- UNITED STATES Pharmacopeia: 15th ed. 1955. 1178 pp.

The Association

Fluoridation

The following information respecting the position of fluoridation in Canada has been compiled at this headquarters.

Statements by Government Health Departments Federal

On February 14th, 1955 in the House of Commons the Minister of Health and Welfare was asked the following question:

"Has it been definitely proved that one part per million of fluoride in a water supply will help to prevent tooth decay?"

His reply was: "Yes, to the extent of about 65%. This has been proved by research studies carried out in Canada and in the United States, including one conducted by the Department of National Health and Welfare over the past eight years working in co-operation with the departments of health of the province of Ontario, Brant County, Lambton, and the city of Stratford."

The following speech was broadcast by the Minister of Health and Welfare over station C.K.O.Y., Ottawa on March 12th, 1955:

"Fluoridation of public water supplies for the purpose of reducing tooth decay may well prove to be one of this century's most outstanding contributions to community good health. The effectiveness and safety of fluoridation, which is the procedure of mechanically supplementing a water supply whose natural fluoride content is deficient to a level of one part per million fluoride, have been subjected to the most careful and continuous investigation for over twenty-five years. No other measure for the protection and improvement of public health has received more thorough study.

Since 1945, several clinical research studies have been in progress in Canada and in the United States, one of these being conducted by the Department of National Health and Welfare. Results of all these studies show that the adjustment of previously fluoride deficient water supplies by mechanical fluoridation to a level of one part per million brings about a reduction of 60 to 65 per cent in the occurrence of tooth decay in children of school-age. This is comparable to what was known previous to 1945 concerning the tooth decay of children and

adults born and brought up in areas where the water contained naturally occurring fluoride in this concentration, as contrasted to that of children and adults in districts whose water was lacking in fluoride.

There has been no scientific evidence, I may say, of any hazard to health as a result of the continued consumption of water containing one part per million fluoride. In fact there has been no published report of any injury to the health of any person drinking naturally fluoridated water having concentrations as high as eight parts per million.

The adjustment of the fluoride content of any individual community's water supply to the level required for protection of dental health is governed by a number of purely local considerations, such as the prevailing dental caries experience of its children and existing fluoride concentration of its water supply. Benefits to be expected and the course of action which should be taken to bring about those benefits can best be stated by the community's dental, medical and public health authorities.

And so for these reasons any community considering the institution of fluoridation must make its own decision in consultation with its own local and provincial health authorities."

Provincial Departments of Health Newfoundland

"For several years now this Department has been following with close attention the work that has been done in other countries with regard to the fluoridation of public water supplies.

In the earlier stages there was some element of controversy as to the desirability of this procedure but any doubts seem to have been completely disposed of and the desirability and effectiveness of the process has received universal approval in all scientific quarters. The procedure has been approved by the United States Public Health Service, The American Public Health Association, The Dental Directors Association, and some sixty-three of American and Canadian Universities including McGill, Toronto, Queen's, Saskatchewan, British Columbia, Montreal, Western Ontario, Laval, Harvard, Yale, Johns Hopkins, Columbia and Stanford. It would seem desirable, therefore, that the fluoridation of water supplies in Newfoundland should be taken under consideration by all responsible authorities and we would like to have your views as to the practicability of introducing this health measure in the city of St. John's."

July 2nd, 1954.

Prince Edward Island

No statement available.

Nova Scotia

"The Department of Public Health of the Province of Nova Scotia approves in principle the adjustment of the fluoride content of public water supplies as a preventive dental health measure in communities where there is a strong public demand for fluoridation and where this measure has the support of the local dental and medical groups and where there exists adequate means of supervision and control.

This Department is prepared to advise and co-operate with any community contemplating the institution of a fluoridation program."

New Brunswick

"Owing to an ex parte application by certain ratepayers before the Supreme Court against a resolution passed by the City Council of Fredericton in favour of fluoridation of the water supply it would appear that the introduction of fluoridation will be delayed in the entire province. The Supreme Court did not rule on the merits of fluoridation but on a legal technicality respecting the wording of the New Brunswick Health Act. The Judgment reads —'In my view they (the words of the Act) are not capable of that construction. It seems abundantly clear that such treatment by chemical or other means can only be carried out as an operation for the purification of a water system or water supply.' It is unlikely that enabling legislation will be passed at the forthcoming session of the legislature."

Quebec

The Deputy Minister of Health, Province of Quebec states as follows:—

"I thank you for your letter of December 21st, 1955, and beg to inform you that our Department has not been called upon to issue an official statement on the subject of fluoridation of communal water supplies.

We only beg to point out that we are favourable to fluoridation of water."

December 28th, 1955.

Ontario

Statement by Minister of Health for Ontario:—

"The Medical Statistics of the Ontario Department of Health has reported to Health Minister Phillips that since the introduction of fluorine into the water system at Brantford, Ont., 'there has been a significant decrease, amounting to

60 per cent, in the number of decayed, missing and filled teeth suffered by Brantford school children'.

The report resulted from a Divisional review of the findings of the Brantford experiment at the close of the 10-year experimental period, 1945-55.

The purpose of the Brantford experiment was to determine whether the mechanical adjustment of the fluoride content of the municipal water supply to 1.2 parts per million fluoride ion would reduce the rate of tooth decay to the lower level found in regions where the drinking water contains fluoride naturally.

Commenting on the report, Dr. Phillips referred to an earlier report by a University of Toronto committee which stated there was merit in the claims made for the fluoridation of community water supplies, and that there was nothing to indicate that this practice was harmful to persons of any age.

'In the circumstances, therefore,' Dr. Phillips said, 'the introduction of 1.2 parts sodium fluoride to one million parts of water in municipal water supplies would appear to be both harmless and beneficial. The maximum concentration should never be higher than 1.5 parts of sodium fluoride in one million parts of water.'

In its report summary, the Division of Medical Statistics states that practicing physicians and dentists in Brantford have attested to the absence of any clinically observable ill effects. This would appear to be in line with other similar reports.

'The safety of ingesting water fluorides at the recommended dosage has been studied and has been attested to by all of the leading agencies and organizations concerned with the health of the public,' the report states.

The report notes that during the 10-year period since fluoride was added to the Brantford water supply the caries attack rates in that city have decreased to become comparable to those in the natural fluoride region of Stratford, Ont. Previously, the Brantford dental caries rates were as high as in Sarnia, Ont., where there is no fluoride in the water.

Discussing the cost of water fluoridation in Brantford, the report states it has ranged between 12 and 17 cents per capita per year using the chemical sodium fluoride, but the use of sodium silico-fluoride in the future is expected to reduce this cost to about six cents per capita.

'This small expenditure results in an average reduction in decayed teeth the treatment of which would cost between 10 and 20 times as much,' the study comments.

The report states that Dr. W. L. Hutton, Medical Officer of Health for the City of Brantford, deserves much credit for initiating the practice of water fluoridation in Canada, and that Dr.

Hutton's own words could be used to summarize conclusions of the report: 'Brantford's 10-year study of water fluoridation has demonstrated that fluoridation is simple, cheap, effective and completely safe.'

December 12th, 1955.

Manitoba

Statement of Government Policy re Fluoridation of Water.

'It may safely be stated that the question of fluoridation of water supplies is a very controversial one, and arguments can be advanced on both sides of this question. However, fluoridation has been endorsed as being both safe and effective in reducing the incidence of dental caries by practically all health organizations in Canada and the United States. These organizations include.

Canadian Medical Association
Canadian Dental Association
Canadian Public Health Association
American Medical Association
American Dental Association
American Public Health Association
National Research Council
United States Public Health Service

The preponderance of expert medical and dental opinion is to the effect that: (1) there is no physiological harm for the human body if the dosage, as supplied in a public water system, does not exceed 1.5 parts per million of fluoride in terms of fluorine.

(2) the benefit to be derived is reflected in a measurable degree by the lessening of dental caries in children's teeth.

The most reliable source of information would appear to be the results of the 'Brantford Experiment in Ontario,' as reported from time to time by the Department of National Health and Welfare. The survey in this regard has been carried on for ten years; the beneficial results are obvious as far as the dental health of children is concerned, and there is no evidence of bodily disability resulting from the use of fluoridated water.

In Manitoba only one community has a fluoridated water supply, that is the City of Brandon, which commenced in March, 1955. Our Department has conducted tests at the waterworks plant, both through our local Health Unit and by the supervising chemist, Mr. W. M. Ward. Our experience has shown that there is no difficulty in keeping the fluoridation process within rigid limits.

It would seem that there is no reason why children should not receive the benefit of fluoridation, as long as:

- (1) the medical fraternity find no evidence of bodily harm;
- (2) the dentists as a group endorse the principle of fluoridation;
- (3) the machinery to supply the fluoride and

the plant lay-outs are supervised by capable personnel under the overall guidance of competent public health engineers;

(4) the testing of fluorine content of the water before and after conditioning; the evaluation of the fluoride compounds being used; and the industrial hygiene aspect of the procedure are carefully supervised by a competent chemist, viz., a technical officer of the Department of Health and Public Welfare.

It is the feeling of this Department that the decision of whether or not a water supply should be fluoridated, should rest with the municipality. We are convinced that our Municipal officials are capable of weighing the evidence pro and con, as well as being able to take into account the feelings of their own rate-payers. Consequently, the policy of this Department is to have any municipality wishing to fluoridate its water supply, file an official request for permission to do so. Provided that the natural fluorine content of the water is low, and that our officials are free to make certain that efficient control measures are provided for, and are able to keep close check to make sure these control measures are being carried out, then permission would be granted."

December 5th, 1955.

Saskatchewan

Statement released by Department of Public Health:—

"Fluoridation of Community Water Supplies to Reduce Dental Caries

It has been announced by Dr. F. D. Mott, Acting Deputy Minister of Public Health, that the Department of Public Health favours the artificial fluoridation of community water supplies in the larger urban centres of the province. The Department considers that there is now sufficient proof in experimental programs in the United States and to some extent in Canada that the artificial fluoridation of water supplies will result in a substantial decrease in dental caries among children.

'The fact has been established beyond question,' said Dr. Mott, 'that when water supplies naturally contain between 1 and 1.5 parts per million of fluorine, there is from 40-60% less tooth decay among children of school age (varying with the age) when these children have been brought up on such water continuously since birth. Studies in several communities in the United States and a study conducted by the Department of National Health and Welfare in Brantford, Ontario, have given conclusive proof of this fact. Growing out of this knowledge, experiments have been conducted in a carefully controlled manner in certain selected communities such as Grand Rapids, Michigan, Newburgh, New York, and Evanston, Illinois, to

see whether similar worthwhile results would come from the artificial fluoridation of community water supplies. While the evidence is not absolutely complete, sufficient evidence has now been accumulated to show that fluoridation has definitely led to some reduction in caries among younger children. Our view, therefore, is that there is no longer reason to await further experimentation, but that there is every justification for our large centres embarking on programs of artificial fluoridation of their water supplies'.

The water supply of Brantford, Ontario, has been artificially fluoridated since June, 1945, and careful research is being carried out in this community by the Department of National Health and Welfare. There has not been sufficient time as yet, however, for the federal department to report on the results obtained, since studies of this type take several years before any conclusions can be drawn.

It was pointed out by Dr. Mott that the artificial fluoridation of community water supplies has been endorsed by the American Public Health Association, which includes professional public health workers from Canada as well as the United States, and by the American Dental Association. The resolution of the American Public Health Association dealing with this matter, which was adopted in November, 1950, reads as follows: 'Whereas, accumulated evidence indicates a sound basis for the fluoridation of public water supplies for the partial control of dental caries, therefore be it RESOLVED: that this procedure be recommended as a safe and effective method for reducing the prevalence of dental caries'.

Dr. Mott requested that any city or larger urban community interested in this matter communicate with the Department of Public Health. Both the Division of Dental Health and the Division of Sanitation are anxious to co-operate in any way with the communities interested in embarking on a program of artificial fluoridation. The department of National Health and Welfare has informed the Department of Public Health that they would also be very willing to give Saskatchewan communities the benefit of their experience in this field."

May 4th, 1951.

Alberta

Statement received from Department of Health:—

"I have your letter of December 21st regarding an official statement on the part of this Department in relation to fluoridation.

No such statement has been issued. However, on the credit side of this ledger, I think Alberta should be regarded as having issued the report of the Alberta Research Council in relation to fluoridation of communal water

supplies. This report gives every evidence of being completely impartial and, of course, was 100% in favour of fluoridation."

December 29th, 1955.

British Columbia

Statement published in annual report of Department of Health:—

Fluoridation

"Until very recently the generally accepted and practical means of preventing dental disease could only provide some hope that any widespread improvement in dental health could only be anticipated in the years to come, after personal habits had changed sufficiently.

However, during the past years this Division has constantly kept under review the rapidly accumulating evidence relating to the artificial fluoridation of communal water-supplies which are naturally deficient in this regard. Therefore, during this year it became our carefully considered opinion that the evidence in favour of such procedures had advanced to the degree when a change of policy by this Department should be considered. Therefore, the policy of this Department is now amended to read as follows:—

"In communities where the artificial fluoridation of the public water-supplies could be a practical procedure and the procedure has the full approval of the local health authorities and others responsible for the communal health, and in the light of evidence now available, local authorities are now strongly urged and recommended to adopt this procedure, but having first submitted their plans for so doing to this Department for approval.

"However, in so doing, this Department feels that it must be fully appreciated that the evidence clearly shows that the fluoridation of water-supplies must be considered an adjunct to other existing methods of reducing dental decay and not a procedure to be adopted in lieu thereof.

"Furthermore, since any community undertaking fluoridation will be in a position to make valuable contribution to the scientific data now available, and also in order to prove, in the years to come, to the citizens of the community the value of this procedure, it is strongly recommended that the dental defects of at least representative samples of the child population should be periodically recorded, beginning with a pre-fluoridation survey."

The importance of this means of prevention must be fully realized. This procedure, it is now believed, if used along with other preventive dental measures, offers for the first time real hope that within the foreseeable future, dental disease may be controlled to the degree that dental treatment can be made available to all persons so needing.

It will be one of the major projects of this Division during the coming year to ensure that there is available to public health personnel, members of the dental and medical professions, and other interested citizens various types of material accurately describing the advantages of the first method so far discovered whereby one of the major dental diseases may be successfully controlled other than by individual co-operation. It is to be appreciated that no widespread action to fluoridate communal water-supplies may be anticipated immediately. Such will not be the case until sufficient people understand the advantages and the entire absence of disadvantages of this procedure. To assist people to become aware of these facts, now undisputed by qualified research-workers in this field, will be the object of this Division."

1952.

STATUS OF WATER FLUORIDATION IN CANADA

(As of January 1st, 1956)

Municipality	Start of Treatment	Population
Brantford, Ont.	20 June 1945	50,000
Fort Erie, Ont.	18 Jan. 1952	8,500

Thorold, Ont.	12 Feb. 1952	7,500
Sudbury, Ont.	29 Aug. 1952	58,000
Moose Jaw, Sask.	Dec. 1952	27,000
Deep River, Ont.	9 Dec. 1952	2,800
Oshawa, Ont.	26 Feb. 1953	42,000
Assiniboia, Sask.	May 1953	2,250
Swift Current, Sask.	Oct. 1954	9,000
Point Claire, Que.	3 Feb. 1955	14,000
Weyburn, Sask.	Mar. 1955	7,500
Toronto Twp., Ont.	28 Mar. 1955	23,000
Smithers, B.C.	21 June 1955	2,000
Saskatoon, Sask.	July 1955	60,000
Prince George, B.C.	13 Sept. 1955	12,000
South Porcupine, Ont.	3 Oct. 1955	8,200

STATISTICAL SUMMARY ON FLUORIDATION IN CANADA

(As of January 1st, 1956)

Year	Number of Municipalities Fluoridating	Total Population Served
1950	1	50,000
1953	8	198,050
1954	9	207,050
1955	17	355,750

MEMORANDUM RESPECTING INCOME TAX RETURNS BY MEMBERS OF THE DENTAL PROFESSION

As a matter of guidance to the dental profession and to bring about a greater uniformity in the data to be furnished to the Taxation Division of the Department of National Revenue in the annual Income Tax Returns to be filed, the following matters are set out.

Income

1. There should be maintained by every member of the dental profession an accurate record of income received, both as fees from his profession and by way of investment income. The record should be clear and capable of being readily checked against the return filed. Records should be maintained in books kept for the purpose which should be retained until written permission for their disposal is obtained from the Minister of National Revenue.

Expenses

2. Under the heading of expenses the following accounts should be maintained

and records kept available for checking purposes in support of charges made:—

- (a) Dental and like supplies;
- (b) Office help, nurse, and book-keeper; laundry and malpractice insurance premiums. (It is to be noted that the Income Tax Act does not allow as a deduction a salary paid by a husband to a wife or vice versa. Such amount, if paid, is to be added back to the income.);
- (c) Telephone expenses incurred in connection with professional practice;
- (d) Assistants' fees
The names and addresses of the assistants to whom fees are paid should be furnished on or before the last day of February in each year on Income Tax Form known as Form T.4, obtainable from your District Income Tax Office. (Do not confuse with individual return of income, Form T.1, to be filed on or before 30th April in each year);
- (e) Rentals paid;
The name and address of the owner (preferably) or agent of the rented premises should be furnished. (see (g));
- (f) Postage and stationery;
- (g) Proportional expenses of dentists practising from their residence —

(a) Owned by the dentist;

Where a dentist practises from a house he owns and as well resides in, a proportionate allowance of house expenses will be given for the study, laboratory, office and waiting room space, on the basis that this space bears to the total space of the residence. The charges cover taxes, light, heat, insurance, repairs, and interest on mortgage. (Name and address of mortgagee to be stated). Note: For depreciation see item 2. (m).

(b) rented by the dentist;

The rent will be apportioned and heat and light if paid by the dentist; the owner of the premises takes care of all other expenses mentioned in (a) above.

The above allowance will not exceed one-third of the total house expenses or rental unless it can be shown that a greater allowance should be made for professional purposes.

(h) Sundry expenses (not otherwise classified);

The expenses charged to this account should be capable of analysis and supported by records.

Claims for donations paid to charitable organizations will be allowed up to 10 per cent of the net income from all sources upon submission of receipts to your District Income Tax Office. This is provided for in the Act.

The annual dues paid to governing bodies under which authority to practise is issued and membership association fees, to be recorded on the return, will be admitted as a charge.

The cost of attending post-graduate courses will not be allowed.

(i) Carrying charges;

The charges for interest paid on money borrowed against securities pledged as collateral security may only be charged against the income from investments and not against professional income.

(j) Business tax will be allowed as an expense but income taxes will not be allowed.

(k) Automobile expenses;

Taxi fares and automobile expenses incurred in earning the income from the dental practice will be allowed when the dentist must visit his patients at their homes. The cost of transportation between the dentist's home and his office, however, is not an allowable deduction from income.

(l) Contrary to its practice for previous taxation years, the Taxation Division has advised that claims for convention expenses cannot be admitted for 1955 and subsequent taxation years under the law as it now reads. This ruling follows the decision handed down by the Income Tax Appeal Board and the Exchequer Court in the recent appeals of Dr. H. Griffith (physician). In both cases it was held that convention expenses were not a proper deduction from income for income tax purposes. The Taxation Division must apply the findings of the Court.

(m) Depreciation;

A description of the treatment of depreciation may be found on page four of the Income Tax Return form T.1 General under the Part XI Method.

The method of computing depreciation for tax purposes is the same as that used last year and you should have no difficulty if you have a copy of last year's return available.

Simply carry forward the balance remaining in each class after deducting last year's allowance. Add to this figure the cost of any new equipment purchased and deduct the proceeds from any disposal of property in each class. The rate you wish to use, not exceeding the maximum rate (see below), is applied to this new balance for each class to obtain the depreciation you may claim this year.

The schedule on page four of the Income Tax Return is reproduced:—

SCHEDULE

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Class	Undepre-	Cost of	Proceeds	Undepre-	Rate	Capital	Undepre-
Number	ciated	Additions	From	ciated	%	Cost	ciated
	Capital	During	Disposals	Capital		Allow-	Capital
	Cost at	1955	During	Cost		ance	Cost at End
	Begin-		1955	Before		For	of 1955
	ning of			1955 Al-		1955	(Col. 5
	1955			lowance			less Col. 7)
	(Col. 10			(Col. 2			
	of 1954			plus 3,			
	return)			less) 4			

The maximum rates for the classes of equipment most used by dentists follow:

Assets	Class	Maximum Rate
Dental Equipment including instruments each costing \$50.00 or more	8	20%
Instruments costing less than \$50.00	12	100%
Office Furniture & Fixture	8	20%
Frame Building (office or residence used both as dwelling and office)	6	10%
Brick Building (office or residence used both as dwelling and office)	3	5%

Instruments costing less than \$50.00 each belong in class 12 and have a maximum allowance rate of 100%. They should not be included in expenses but should be recorded as additions in column 3 of the schedule.

Where a dentist practises from a house which he owns and resides in, the allowance may be claimed as above on a portion of the cost of the residence, excluding land. For example, if the residence were a brick building costing \$12,000.00 and one-third of the space were used for the office, the dentist would use \$4,000.00 as the business portion of the cost and apply the building rate of 5% to determine the maximum depreciation allowable in the first year.

For further information on the subject, you may refer to the Regulations or you may consult your District Income Tax Office.

Payment of Tax

3. Payment of Tax. Individuals whose income is more than 25% derived from sources other than salary or wages, are required to pay the tax for each year by quarterly instalments during such year on the following dates, 31st March, 30th June, 30th September and the 31st December.

Dentists Under Salary Contract

4. The Income Tax Act provides for the deduction of certain expenses from salary income.

The allowable expenses include travelling expenses, annual professional membership dues, office rent, salary to an assistant or substitute and supplies consumed directly in the performance of the duties of employment.

Certain conditions are attached to the allowance of the expenses and without trying to recite the exact provisions of the law, the main points are:

- (a) That the expenses must have been incurred in the performance of the duties of the office or employment.
- (b) That the employee is required under the contract of employment to pay the expenses.
- (c) To claim travelling expenses the employee must be ordinarily required to carry on the duties of his employment away from his employer's place of business. Travelling between the dentist's home and his office is not included.

Income From a Partnership

5. Additional expenses incurred by a partner, but not charged to the partnership, may be claimed as a deduction from the partner's share of income. However, the partner must be in a position to substantiate these expenses, to show why they were not charged to the partnership and that they were necessarily laid out to earn the partnership income.

1955-1956 DENTAL STUDENTS' REGISTER

(As reported by Deans of the Schools)

Canadian Dental Association, 234 St. George Street, Toronto 5, Canada

Dental Students' Register

The number of students in attendance at Canadian dental schools is reported to be slightly higher than for last year. The increase is entirely due to a higher registration at the University of Montreal. The other four dental schools each report a slight decrease of from one to four students which is insignificant.

No change is reported in respect to accommodation for dental students. This number as given in Table II has remained constant for several years and will not change until increased teaching facilities become available.

An interesting point is that the highest number of women (26) ever reported is now in attendance at Canadian dental schools (3.4%). This increased number is partially due to the attendance of European graduates and does not necessarily indicate greater interest in dentistry by women students in Canadian secondary schools.

The source of students (Table V) shows that approximately 8% are from countries outside of Canada. Some 39 of these are reported as from the United States. By coincidence the American Dental Association reports 39 students from Canada in attendance at dental schools in the United States for this same academic year.

In Table VII the figures affected most

by students in attendance at dental schools in the United States are those given for British Columbia. Approximately 40% of such Canadian students are attending dental schools on the west coast and these may be reasonably assumed to be from British Columbia. If this supposition be true then the ratio of all students from British Columbia to the population of that province would be approximately one to 26,000.

The number of graduates cannot exceed a maximum of 200 for at least four years, as indicated in Table I. This number will remain constant until teaching facilities become available for the admission to the Schools of an increased number of students.

Prospects for added teaching facilities for dentistry have brightened during the last year. Dalhousie University has announced the building of a new dental school to be started next March. The University of Toronto has plans in preparation for a new dental school. The University of British Columbia has been actively engaged in a survey directed toward the establishment of a dental school. While discussion has occurred at other centres these three projected schools are well advanced. The fruition of present plans would mean an increased capacity for an estimated 125 students per year.

TABLE I

Total Enrolment of Undergraduate Students in the Dental Schools of Canada as of January 1st, 1956

University	Freshmen	Sophomores	Juniors	Seniors	Men	Women	Total
Dalhousie University.....	12	11	11	13	46	1	47
McGill University.....	35	36	31	34	135	1	186
University of Montreal.....	51	52	37	21	160	1	161
University of Toronto.....	74	80	78	78	289	21	310
University of Alberta.....	27	30	28	30	113	2	115
Totals.....	199	209	185	176	743	26	769

TABLE II

Maximum Number of Undergraduate Students that will be Accepted in a Class in Canadian Dental Faculties

Dalhousie University.....	12
McGill University.....	35
University of Montreal.....	60
University of Toronto.....	65
University of Alberta.....	30
Total.....	202

TABLE III

Recapitulation of Undergraduate Enrolment in the Dental Schools of Canada 1940-1955 Inclusive

School	Dalhousie University	McGill University	University of Montreal	University of Toronto	University of Alberta	Total
1940-41.....	31	58	104	210	51	454
1941-42.....	25	61	118	232	49	485
1942-43.....	25	67	139	270	53	554
1943-44.....	22	67	154	255	24	522
1944-45.....	28	51	162	264	34	539
1945-46.....	27	73	184	180	54	518
1946-47.....	38	111	188	340	108	785
1947-48.....	37	127	208	435	115	922
1948-49.....	41	146	224	478	123	1012
1949-50.....	48	147	225	478	136	1034
1950-51.....	48	145	196	380	114	883
1951-52.....	49	145	140	300	121	755
1952-53.....	50	141	111	294	123	719
1953-54.....	50	142	98	299	118	707
1954-55.....	48	138	130	313	119	748
1955-56.....	47	136	161	310	115	769

TABLE IV

Total Number of Graduates During the Years 1940-1955 Inclusive

School	Dalhousie University	McGill University	University of Montreal	University of Toronto	University of Alberta	Totals
1940.....	12	13	23	56	13	117
1941.....	7	18	14	45	13	97
1942.....	8	9	31	40	32	120
1943.....	11	26	18	103	8	166
1944.....	6	12	37	61	24	140
1945.....	8	13	30	58	7	116
1946.....	0	5	41	56	0	102
1947.....	10	18	36	75	10	149
1948.....	9	15	38	24	13	99
1949.....	6	34	45	75	20	180
1950.....	11	36	42	168	49	306
1951.....	12	37	69	152	25	295
1952.....	12	36	55	85	27	215
1953.....	14	34	20	75	35	178
1954.....	14	37	20	69	32	172
1955.....	13	35	19	78	29	174

For the Year 1955

	Male	Female
Dalhousie University.....	12	1
McGill University.....	35	0
University of Montreal.....	18	1
University of Toronto.....	77	1
University of Alberta.....	27	—

TABLE V

Distribution of Undergraduate Students by Provinces and Foreign Countries in the Dental Schools of Canada as of January 1st, 1956

School	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	United States	British West Indies	Bermuda	Africa	Europe	Australia	Great Britain	India	Totals
Dalhousie University.....	9	4	20	9							2	1				1	1		47
McGill University.....	2	1	1	1	60	15	6		1	7	34	5	3						136
University of Montreal.....		2		5	145	4	1	1			3								161
University of Toronto.....	1	1		1	1	279	11	6		5						1	3	1	310
University of Alberta.....							6	25	56	20		1		1	6				115
Totals.....	12	8	21	16	206	298	24	32	57	32	39	7	3	1	6	2	4	1	769

TABLE VI

Additional Students

	Dalhousie University	McGill University	University of Montreal	University of Toronto	University of Alberta	Totals
*Graduate during 1955-56.....	0	0	0	10	0	10
**Post-Graduate during 1955-56.....	0	0	10	8	0	18
***Occasional during 1955-56.....	0	0	0	45	0	45
Student Dental Hygienists 1955-56	0	0	0	20	0	20

*The term "graduate" means those dental graduates registered in the Graduate School of a University, proceeding to a degree.

**The term "post-graduate" means those dental graduates registered in a Dental Faculty, proceeding to a degree, diploma or certificate.

***The term "occasional" means those dental graduates registered in a Dental Faculty, for courses of long or short duration, but not proceeding to a degree or diploma.

TABLE VII

Computed Data Respecting Relationship by Percentage and Ratio to Population per Province of Origin of Canadian Students Attending Canadian Dental Schools

Students From	Percentage of Students	*Ratio of Students to Population
Newfoundland.....	1.56	1/34,333
Prince Edward Island.....	1.04	1/13,500
Nova Scotia.....	2.73	1/32,524
New Brunswick.....	2.08	1/34,875
Quebec.....	26.79	1/21,942
Ontario.....	38.75	1/17,393
Manitoba.....	3.12	1/35,375
Saskatchewan.....	4.16	1/27,781
Alberta.....	7.41	1/18,702
British Columbia.....	4.16	1/40,781
Canada.....		1/20,287

*Population figures used are estimates as supplied by the Dominion Bureau of Statistics as of June 1st, 1955.

Note: According to information supplied by the American Dental Association there are 39 students from Canada in attendance at dental schools in the United States for the academic year 1955-56. As the province of origin is not designated these cannot be taken into consideration in calculating ratios to population.

TABLE VIII
Number of Qualified Applicants for Dental Course

University	Alberta	Toronto	McGill	Montreal	Dalhousie
1945 Applicants.....	26	251	87	157	?
1946 Applicants.....	59	?	104	108	?
1947 Applicants.....	27	?	190	137	?
1948 Applicants.....	44	410	165	135	?
1949 Applicants.....	50	290	142	140	?
1950 Applicants.....	45	239	124	112	?
1951 Applicants.....	37	228	118	72	?
1952 Applicants.....	40	206	50	107	25
1953 Applicants.....	45	243	50	93	20
1954 Applicants.....	31	187	135	133	16
1955 Applicants.....	38	202	50	149	26

Note: The figures given in this table are not to be interpreted as accurate but rather as comparative indices from year to year. The basis of considering applicants varies from school to school and consequently the figure submitted by one school is obtained by a different method than for another school.

Committees and Councils

Research Committee

"Research, and research alone, can provide the navigational aids to lay a true course through the stormy transitional period ahead. Research activities should be doubled and redoubled with particular emphasis upon basic research, the seed corn of research which must of necessity precede the later harvest of applied research. In this rapidly changing scientific world of the present, a continuation of a *laissez faire* attitude toward dental research might well produce an irremediable situation in the future." (TRENDLEY DEAN)

The increasing activities of the Research Committee of the Canadian Dental Association reflect a growing recognition on the part of the dental profession in Canada that a "*laissez faire* attitude toward dental research" is incompatible with professional growth.

Adequate dental research in Canada is assured, in part, by the studentship program of the Canadian Dental Association. These studentships are administered through the Research Committee and offer financial assistance to promising candidates who wish to prepare them-

selves for a career in teaching and research. Eighteen dentists have received specialized training in such diverse fields as Anatomy, Bacteriology, Biochemistry, Endocrinology and Histology since the inauguration of the program in 1947. During the past year the Committee approved fellowships in the field of Nutrition and Biochemistry. Assistance has also been rendered to dental research personnel to attend a scientific meeting dealing with "The Structure, Chemistry and Physiology of Bones and Teeth" and a course in "Medical Mycology".

The Research Committee has reviewed the effectiveness of dentifrices in the prevention of gingivitis and dental caries. A statement re: Fluoride and periodontal disease has been prepared and released by this Committee. In response to several inquiries the Committee has reviewed the literature dealing with the effects of chewing gum on dental caries and oral hygiene. A statement in this connection has been prepared. The brochure "Facts

on Fluoridation" has been revised to include additional data made available from recent publications.

The Committee has completed a survey of the present status of dental research in Canada. The survey is intended to serve as a base line in determining the best direction for further expansion of dental research in Canada. The survey revealed what we know in a more general way—that activity in dental research is most inadequate in relation to the magnitude of the problem. The important findings of the survey are summarized below:

1. There are no dentists engaged in research in three of the five dental schools in Canada.

2. There are no graduate students engaged in research work in four of the five dental schools in Canada.

3. The physical facilities for research and the annual budget for research in

most dental schools are nil.

4. Original research publications are very sparse. During the four years 1950-54 only one Canadian school presented papers at the meeting of the International Association for Dental Research.

These findings have been reported to the Council on Dental Education. Emphasis was laid on the fact that the real difficulty appears to be associated with insufficient numbers of adequately trained personnel. The shortage of adequately trained personnel is even more acute when considered in the light of recent reports that new Faculties of Dentistry may be built, within a short time, in several Universities in Canada. The problem demands urgent consideration in order to correct a grave shortage of qualified personnel now and to forestall an "irremediable situation in the future".

Gordon Nikiforuk, Chairman.

HIGHLIGHTS OF THE ONTARIO DENTAL ASSOCIATION CONVENTION

ROYAL YORK HOTEL, TORONTO—MAY 13, 14, 15 and 16, 1956

- ★ **Sunday Evening Musicale** The Leslie Bell Singers
- ★ **Dental Public Health Breakfast Meeting—Mon., May 14th** Dr. Harry Ebbs
- ★ **Monday Luncheon Speaker** Mr. Daniel Coughlan
- ★ **Dental Public Health Tuesday Luncheon** Dr. Herman Hilleboe
- ★ **Tuesday Evening** Dinner Dance and Floor Show
- ★ **Monday Evening** Ladies' Buffet Supper with guest speaker
Class and Fraternity reunion dinners

Essayists—

Dr. J. Clifton Eselman, Pittsburgh

Dr. Emmett Beckley, Kansas City, Mo.

Group Clinicians—

Dr. J. Clifton Eselman, Pittsburgh, Pa.
Dr. Emmett Beckley, Kansas City, Mo.
Dr. S. Charles Brecker, New York
Dr. T. M. Graber, Evanston, Ill.
Dr. Viggo B. Sorensen, Chicago, Ill.
Dr. W. F. Walford, Montreal
Dr. S. A. MacGregor, Toronto

Dr. Roy Hemmerich, Kitchener
Dr. M. E. Lucyk, Toronto
Dr. D. B. McAdam, Toronto
Dr. J. F. Methven, Toronto
Dental Public Health Committee
Royal Canadian Dental Corps
Investment Dealers' Association of Canada

Economic Security

Problems in the Administration of Estates

by TERENCE SHEARD, Q.C.*

PART I

Most people hope that whatever they are able to accumulate will be passed on to their dependants with a minimum of fuss, bother, taxes, and expense. Not many would agree with the English Chancery lawyer who is said to have remarked, "A good estate is too fine a thing to be squandered on the beneficiaries"; meaning, no doubt, that if possible it should be made to produce litigation that would be profitable to lawyers. When the will of some prominent person does get into the courts, and hence into the newspapers, it is natural for those, not lawyers, to wonder into what pitfall this particular person tripped and how such traps are to be avoided. Some, in despair, give up altogether the idea of making a will and resign themselves to die intestate. But this, as Mr. Deal has pointed out in earlier numbers of this "Journal", is not the answer.

The right to make a will is a privilege the law extends, not a duty of which it exacts the performance. It is not an absolute privilege; there are some things you are not allowed to do, but, generally speaking, the field of choice left to individual preference is a wide one. As was said by a celebrated English Judge, "The English law leaves everything to the unfettered discretion of the testator, on the assumption that—though in some instances, caprice, or passion, or the power of new ties, or artful contrivance, or sinister influence, may lead to the neglect of claims that ought to be attended to—the instincts, affections and common sentiments of mankind may be safely trusted to secure, on the whole, a better disposi-

tion of the property of the dead, and one more accurately adjusted to the requirements of each particular case, than could be obtained by the stereotyped and inflexible rules of a general law".

Like most other privileges we possess in a free society, if it is to be well exercised, such exercise requires some care, thought and some assistance from others. And this brings me to the first, and not the least important, of the pitfalls. Many people do, unfortunately, tend to put off the preparation of a will until extreme old age, or the onslaught of some dangerous disease brings them face to face with death as an imminent event. No doubt many wills prepared in such circumstances work out well enough but some do not; it is, perhaps, surprising that more do not. Old age produces strange psychological changes in some people and so can serious illness. When wills are attacked in the courts they are commonly those made by the aged or the ill. Such disabilities are inevitably a poor background for the wise disposition of property.

The converse case is that of the man who makes his will and then never looks at it again as the years roll on. This is an error at the other extreme. Not long ago I had a case involving the will of a man of great business ability which had enabled him to acquire a substantial fortune. Prior to his death he had suffered at least two coronary attacks to warn him that probably his condition was not compatible with any prolonged expectation of life. Nevertheless, when he died (in 1953) his will was found to have been made in 1928! Fortunately, in this case it was possible to persuade the court to place an interpretation on the will that produced a satisfactory result, but it

*Mr. Sheard is a recognized authority on Estates Administration who was selected by the Law Society of Upper Canada to write this article. Ed.

might not have been, and to have left a will unrevised for so many years was obviously unwise.

Some people, although it cannot have been so in the case referred to, refrain from periodic revisions of their wills because such revisions involve the expense of a lawyer's fee. Dentists have been more successful than lawyers in convincing the public that failure to attend their offices regularly is a false economy. Some people after having their wills carefully prepared in the first place even go so far as to attempt periodic revisions of them themselves without professional

aid. Lawyers can afford to smile at such economies; they know they will profit more in the end, just as dentists eventually receive bigger fees from those who neglect their teeth.

Almost as foolish is the custom of preparing a will at the last moment before leaving on a trip or summer vacation when a dead-line date makes it necessary to prepare something in a hurry. Even experienced draftsmen may be pardoned for making mistakes when forced to do a rushed job and haste is always a poor counsellor.

(To be concluded next issue)

Book Review

Differential Diagnosis of Leukoplakia, Leukokeratosis and Cancer in the Mouth. Ashton L. Welsh, M.D. The Ryerson Press, Toronto. 1955. 62 pp. \$2.75.

The author of this monograph is a dermatologist and knows only too well the many conditions that simulate precancerous and cancerous lesions of the oral mucosa, which he himself has estimated at over two hundred.

Of all the precancerous lesions, he has chosen to describe leukoplakia in some detail as one of the commonest premalignant diseases and the sequence of its progression to the true malignant state. He uses the term leukoplakia in the more restricted sense as the lesion of mucous membranes analogous to the senile keratosis of the skin. In the latter part of the book he discusses the differentiation of the commoner and more important clinical lesions that show white patches in the mouth.

The purpose of the book is set out in the foreword in which the author expresses the wish that those seeing the patient first, before the dermatologist be "impressed, informed, and inspired to help toward prevention, correction and cure." The

work is divided into five chapters and supported by five pages of bibliography.

It begins with a fairly detailed clinical description of leukoplakia and a discussion of its causes under the headings of local irritants, constitutional disease and systemic disturbances. Chapter two describes the advanced forms of this precancerous state under the name Leukokeratosis which is featured by warty and papillomatous plaques. The surface is thickened and fissured, looking like cracked white leather. This is the point of imminent danger and the transition to a true malignancy may occur at any moment and very subtly through malignant dyskeratosis to a squamous cell carcinoma. This is followed by a short description of the appearance of squamous-cell carcinoma as it appears in the various oral tissues. Chapter four is a discussion of the oral lesions with which leukoplakia might be confused. The last chapter is a brief recapitulation of the author's message to every examiner—"dentist, general practitioner, pediatrician, insurance adviser, industrial physician, oral surgeon, periodontist, otolaryngologist and dermatologist." When dealing with lesions of the oral mucous membranes don't wait and watch, but act.

Harry Hunter

The Corps

Dr. A. T. Hinch has been appointed to the R.C.D.C. with the rank of captain. Captain Hinch graduated from Dalhousie University, Faculty of Dentistry, in 1947 and practised in Fredericton, N.B. until joining the R.C.D.C. He is married and has one child.

Lt. Col. I. A. L. Millar and Major G. R. Covey attended the February meeting of the Chicago Midwinter Dental Convention. Subsequently Col. Millar made a liaison visit to the dental division, Brooke Army Medical Center, Fort Sam Houston, Texas.

Lt. Col. B. P. Kearney and Major J. C. Brick are enrolled in a 16-week course in advanced dentistry at the Army Medical Services Graduate School, Walter Reed Army Medical Center, Washington, D.C.

Major S. G. Bagnall is attending a course in Prosthodontia and associated subjects, and Major A. T. Roger is attending a course in Oral Surgery at the U.S. Naval Dental School, Bethesda, Md.

Major J. G. Hamilton and Captain B. J. H. Marchant have been designated to study methods of manufacturing and distributing dental stores at the following installations: L. D. Caulk Co., Milford, Del.; H. D. Justi and Son, Philadelphia, Pa., and S. S. White Co., Philadelphia, Pa. and New York, N.Y.

The following non-dental personnel have been promoted to captain: Lieutenants W. J. Thomson, L. K. Wansbrough, E. Clark, G. R. Woodcock and G. J. Moore. Warrant officers D. T. Cook and E. I. Tullis have been promoted to the rank of lieutenant.

News from 54 Dental Unit CA (M)

Lt. Col. G. K. Clarke, former Commanding Officer of 54 Dental Unit CA (M) relinquished Command of this Unit on 1st Jan., 1956. Lt. Col. C. E. Woods, former 2 i/c has taken over as Commanding Officer.

Lt. Col. Woods graduated from the Faculty of Dentistry, University of Toronto in 1942. He joined the Canadian Dental Corps on graduation and saw service in Great Britain, Canada and Europe. Upon his release from the Regular Force he re-enlisted in the Royal Canadian Dental Corps Militia in 1949, where he joined No. 7 Dental Company, which later was changed to 54 Dental Unit. He has been Second in Command for the past two years.

New Officers

Two new Officers have recently joined the Unit.

A/Capt. J. A. M. Chomyn, formerly of No. 3 Dental Unit, Montreal, graduated



Lt. Col. C. E. WOODS,
Commanding Officer, 54 Dental Unit

B.A., Saskatchewan University in 1950. He graduated from the Faculty of Dentistry, McGill University in 1955. He was a member of COTC, University of Saskatchewan 1949-51.

A/Capt. R. S. Robertson, graduated from the Faculty of Dentistry, McGill University, in 1955.

Promotions

Capt. W. D. M. Wright was promoted to the rank of Major as from 19th Dec., 1955.

Awards

Capt. D. E. Long has been awarded the Canadian Forces Decoration, signifying 12 years' service with the Canadian Forces.

Training Courses

Officers of 54 Dental Unit have completed recently an extensive course on the treatment of facial wounds and injuries to the jaws.

The course was conducted by Major A. T. Rogers, MBE, instructor in Oral Surgery at the RCDC School in Ottawa.

A course of lectures is being planned to cover the role of the Dentist in time of national disaster. In addition to Dental Officers of the Unit, civilian dentists will be invited to attend this course.

The Provinces

Alberta

Dr. Robert Van Alstine, Associate Professor of Oral Surgery at the University of Alberta, was guest speaker at a dinner meeting of the **Calgary and District Dental Society** on January 9, 1956. Dr. W. Ross Upton, President of the Society, acted as chairman.

Dr. H. Hopkins of Calgary introduced the guest speaker to the fifty members attending the meeting. Dr. Van Alstine, illustrating his topic with excellent slides, spoke on the subject "Local Anaesthetics". He covered the chemistry and pharmacology of the various local anaesthetics of dental interest and evaluated those in more common usage. This comparative analysis of the anaesthetics proved of great interest to the gathering as evidenced by the question period that followed. The meeting was covered and reported by a representative from the Calgary Herald.

Dr. Lorne K. Brooks expressed the appreciation of the meeting to Dr. Van Alstine.
M. J. L.

The January meeting of the **Edmonton and District Dental Society** was held on January 9th in the Seven Seas. Pres. Alan Fee occupied the chair.

Besides approximately one hundred dentists, there were present a number of distinguished guests of the provincial cabinet, legislature, Edmonton aldermen, city commissioners and a representative of the Edmonton Academy of Medicine—Dr. Begg. Among these guests were the Hon. Dr. Cross, Hon. Mr. Patrick, Hon. Mr. Halmrast, Hon. Mr. Colborne, Hon. Mr. Aalborg, Hon. Mr. Hartley and Hon. Mr. Hinman. Other guests were Mr. A. Miller, Dr. Ross, Mr. H. Tanner, Mr. E. Gerhart, Mr. Faulkner, Mrs. Wilson, Mr. J. M. Tweddle, and Mr. D. B. Menzies.

After the dinner the business part of the meeting consisted of a panel discussion on fluoridation. The four members of the panel were as follows:

- (a) Dr. R. B. Cameron of the Faculty of Dentistry, University of Alberta, who spoke on "Fluoridation and Dentistry".
- (b) Dr. G. E. Greenhill, of the Department of Internal Medicine, Faculty of Medicine, University of Alberta, who spoke on "Fluoridation and Medicine".

- (c) Dr. O. J. Walker, Professor of Chemistry and Director of the School of Graduate Studies, University of Alberta, who spoke on "Fluoridation and its Chemical Aspects".

- (d) Dr. M. Little, Public Health officer for the City of Edmonton, who spoke on "Technical Aspects of Fluoridation".

Dr. Cameron, using charts as an aid to his discussion, spoke on the dental aspects. He stressed the incidence of caries. He discussed the incidence of fluorosis. The speaker compared the caries incidence in Brantford, Sarnia, and Stratford, Ontario, and showed how the caries incidence in Brantford is progressing from the conditions in Sarnia to those prevailing in Stratford. He continued with the mechanism by which caries reduction can be initiated.

In conclusion, Dr. Cameron stated that "evidence is consistent that artificial fluoridation of water results in similar effects in the dentition as that of the natural fluorine in water".

Dr. S. E. Greenhill continued the panel discussion from the medical aspect. He discussed the presence of fluorine in certain industrial areas. He went on to say that fluorine, to reduce dental caries, is not a new idea as it was proposed in the nineteenth century in Germany and Great Britain.

He went on to say that when fluorine is used in minimal quantities as recommended, that there are no undue effects. In conclusion he stated that there is no case to argue against fluorine in water when added as recommended.

Dr. O. J. Walker stated that he had studied over a thousand water samples from various areas of the province of Alberta during the past years. Some water had high fluorine content and some low. Usually surface or near-surface waters are low in fluorine whereas deep wells usually showed a high fluorine content in the water.

Dr. Walker continued, saying that most of the fluorine ingested by the body comes from water and small quantities from other foods. Fluorine is necessary in the formation of bones and teeth. In conclusion he stated that fluorine, although toxic in large quantities, has no undue effects when used as one part in one million parts of water. Furthermore, it has a beneficial effect as one of the trace elements in one's diet.

Dr. M. Little was the fourth speaker. He stated that fluorine can readily be added to

communal water supplies in one of its dry forms such as Sodium Fluoride or as Sodium Silico-Fluoride. It can be added very accurately by weight and a constant check can readily be made to ascertain the amount of fluorine present in the water at any given time. Safeguards are very easily installed and used.

Dr. Little continued by stating that over 1200 communities in North America now add fluorine artificially to their drinking water. Edmonton could add fluorine artificially to its drinking water at a cost of 6.7 cents per person per year if Sodium Silico-Fluoride were used and at a cost of 9.8 cents per person per year if Sodium Fluoride were used.

He concluded by giving the following advantages to artificially fluoridating the water supply:

- i) Reduces caries
- ii) Industry has no complaints
- iii) Does not change color or taste of water
- iv) Cost is very reasonable

A question period was provided at the end of the panel discussion.

The meeting concluded with an announcement that the annual banquet and dance of the Edmonton and District Dental Society would be held in the MacDonald Hotel on January 21st.

R. C. S.

The January meeting of the **Central Alberta Dental Society** was held in Red Deer, on January 25th. Tribute was paid to Robbie Burns by the recitation of "Ode to a Toothache", author unknown.

The business meeting included a report by Dr. Al White, local chairman for Dental Health Week. Preparations were made to cover the Central Alberta area by way of talks to adult groups and the showing of films to school groups.

Guest speaker for the evening was "Mel" Mackenzie, chartered accountant of Red Deer. He traced the history of Income Taxation in Canada and showed present trends on the question of Capital Gains. Particular reference was made to the necessity for proper record-keeping for all dentists. A very lively question period followed the talk. Dr. G. Travis expressed the gratitude of the Society for the excellent presentation by Mr. Mackenzie.

M. S. B.

Dr. Alan D. Fee, President of the **Edmonton and District Dental Society**, and Mrs. Fee, received guests at the Society's annual "ladies' night" banquet and dance in the Macdonald Hotel recently.

Special invitations for the event were extended to Hon. Dr. W. W. Cross, Mrs. Cross, His Worship, Mayor William Hawrelak, Mrs. Hawrelak, Dr. H. N. C. Begg, President of the Edmonton Academy of Medicine, Mrs. Begg, Dr. G. M. Little, Edmonton Medical Health Officer, Mrs. Little, Dr. R. R. McIntyre of Calgary, President of the Canadian Dental Association, Dr. W. Ross Upton of Calgary, President of the Calgary Dental Association, Mrs. Upton, Dr. Stuart Fleming of Red Deer, President of the Central Alberta Dental Association, and Mrs. Fleming.

Dr. W. Scott Hamilton, dean of the faculty of dentistry at the University of Alberta, and Mrs. Hamilton, entertained members of the faculty's 1956 graduating class at tea at their home recently. Mrs. Sperry Fraser and Miss Rhona Corbett poured tea for the 50 guests.

Nova Scotia

The pupils of the **Brookfield Memorial School** and many of the pre-school age children are receiving the services of the dental hygienist. This is a free service provided by the Dental Division of the Department of Public Health and arrangements were made to bring it here through the Home and School Association.

The children who are in the three and seven year age groups are receiving the sodium fluoride treatments. Others have their teeth cleaned and receive instruction in tooth care. Mrs. Helen Porter of Lower Onslow is the hygienist doing the work. Her equipment is set up in the teachers' room at the school and the pupils come in one at a time. The pre-school children have appointments for the after-school hours.

A regular meeting of the **Cape Breton Dental Society** was held in Sydney at the city hospital. The slate of officers for this term is as follows: Dr. John Burke, President; Dr. Eric Whyte, Vice-President; Dr. Philip Simon, Secretary; Dr. Mike Laffin, Treasurer.

An interesting highlight of each meeting is a clinic demonstrated by one or more members of the society.

P. S.

Quebec

The pre-Christmas oyster party of the **Montreal Dental Club** was held on December 14, 1955, at the R.C.D.C. Mess. As an innovation this year, home baked beans were also on the menu, and if the enthusiasm with which they were devoured is any indication, next year it may well be a bean party rather than an oyster party. The evening was completed with the showing of films.

The 58th Annual Meeting of the Montreal Dental Club was held in the Queens Hotel on January 16, 1956. Dr. Kelly, as retiring president, thanked all those who had assisted him in the past year, and wished the incoming executive success in the coming year.

The annual reports for 1955 were presented:

Dr. Pye, treasurer of the club, gave the financial report for the past session, stating that although a loss was incurred, the club's financial position is very solvent.

Dr. Ward, chairman of the Fall Clinic, thanked all who had made it a success, and reported a profit slightly over \$1,000. He said that the 1956 clinic would be held on Oct. 17, 18, 19, and urged all members to contribute to it, by entering into the table clinics.

Dr. Armstrong, as chairman of the golf committee, reported on the golf meets held in the spring and fall. He also reported on the formation of a group, available for home and school meetings etc., to discuss the fluoridation problem. This group also has material available for any interested members who are approached on the subject.

Dr. Geo. Dundass reported for the insurance committee and encouraged all members to augment their Life Insurance with the new plan adopted by the club.

Dr. Bourne, as Historian and Archivist, submitted his annual report on the club, and members' activities.

Dr. Abrahams reported for the College of Dental Surgeons of the Province of Quebec.

Following the reports, the election of the officers of the club took place—
Hon. President—Dr. G. P. Kelly
President—Dr. A. T. Donohue
Pres.-Elect—Dr. E. T. Cleveland
Secretary—Dr. R. A. Lefebvre
Treasurer—Dr. A. E. Pye
Hist. & Archivist—Dr. C. C. Bourne

Directors for two years

Dr. R. Ryan
Dr. S. Smaill
Dr. W. Swiston



*Dr. A. T. DONOHUE, President
Montreal Dental Club*

Photo—Van Dyck & Meyer Studios

For one year

Dr. R. E. McMahon
Dr. G. D. Armstrong
Dr. D. M. Angus

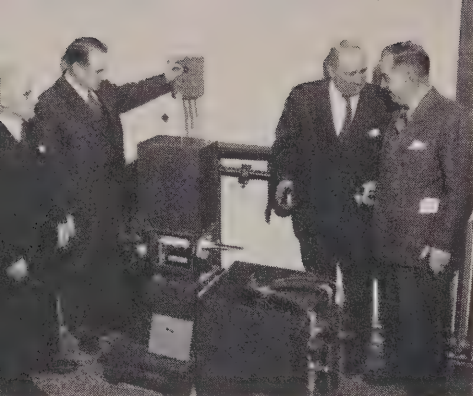
Thirteen new members were elected into the club this year and Dr. Donohue encouraged them to take an active part in all its activities, as well as to present a clinic at the May meeting.

A number of presentations were made. Dr. G. Armitage received a silver tray from the club in commemoration of his 50 years of dental practise and remembrance of his achievements both for the club, and for the dental profession as a whole.

The following were presented for Honorary Membership: Dr. J. S. Common; Dr. W. G. Leahy; Dr. W. T. Donnelly; Dr. S. A. MacSween.

As having completed 35 years in the practise of Dentistry, Dr. Swetnam was presented for Honorary Membership following his retirement, due to illness, in recognition of his outstanding contributions to the club.

The 1955 Annual meeting proved to be an outstanding success, and foretells of an active and full year ahead. D. J. M.



Dr. Gustave Ratte, past-president of the Canadian Dental Association, pushes the switch to commence the fluoridation procedure in Sillery, Quebec.

Photo—Photo Moderne Enrg.

His Honor, the Mayor of Sillery, **Gerard Guay**, presided recently, in the presence of a number of medical personalities from the surrounding region, at the inauguration of a machine designed to fluoridate the water. This is the second such machine installed in the Province of Quebec. Last February the Village of Pointe Clair, due to the foresight of its town councillors, inaugurated this innovation destined to protect their children's teeth.

Manitoba

On Monday January 9th, a joint meeting of the **Winnipeg Dental Society** and the **Manitoba Dental Association** was held at the Royal Alexander Hotel in Winnipeg.

Dr. Maury Massler of the University of Illinois was the guest clinician. Dr. Massler is internationally renowned in the dental field. He is Professor of Pedodontics and lecturer in Oral Medicine at the University of Illinois. He is a member of numerous dental associations, has written many articles, has worked with the United Nations in Italy and Germany and is consultant to the Veterans Administration and to the Navy in Illinois.

Dr. Massler's main theme during the day was the effect of different filling materials and drugs on the pulp tissues of a tooth. He felt that many dentists through improper teaching and through force of habit were using improper or poor methods of lining and filling cavities. He showed by means of slides what the various commonly used drugs do to the tooth pulp, and most of them seemed to be far from beneficial to this tissue. He also illustrated in a similar manner the effect on a tooth when different filling materials are placed in it. He and his associates have been trying for some time to implement some standard tests by which all new materials could be rated before being put on the market. He felt

that this might help to cut down the contents of the "discard drawer" which every dentist seems to acquire as he tries to keep up to all the cure-all materials.

Dr. Massler also told of some of the problems that make research results so difficult to accomplish. His group had done most of their work with rat's teeth which were found to react almost identically with human teeth at different age levels.

However he had also been fortunate in being able to conduct various tests on a variety of human teeth through the co-operation of the Navy Training Centre. Thus through correlating all this material he felt that they had a very true picture of the reactions of the tooth pulp tissue under all types of conditions. He hopes to present these results in book form soon and this book certainly will antique most present books on the subject.

Dr. Massler throughout the day showed why he is known everywhere as "Zinc Oxide and Eugenol" Massler. In all these various tests this particular mixture showed only beneficial reactions on the pulp and it was used as a standard which most other materials failed to match.

Dr. Massler concluded the day's presentation by participating in a round table discussion with several Winnipeg pediatricians. They asked him numerous questions pertaining to the child patient, such as thumb-sucking, sugar in the diet and heredity factors. Dr. Massler very ably answered these from a dentist's point of view and emphasized that there has to be some "give and take" but that the two professions must basically cooperate to ensure a healthy child.

Dr. Massler's popularity in Winnipeg was further enhanced by this excellent presentation and the very large attendance of dentists certainly indicated to him that we were glad to have him back.

A business meeting of the Winnipeg Society was held at the luncheon recess and 85 members attended. The afternoon lecture was followed by a refreshment period and 88 dentists stayed for the dinner. The annual business meeting of the Manitoba Dental Association was held immediately after the dinner.

The business of the annual meeting included the stressing of the need of fluoridation of the communal water supply of Greater Winnipeg; the setting up of a dental faculty in the University of Manitoba, and the passing of the budget for 1956 which included payment of annual dues to the Canadian Dental Association at \$25.00 per member.

The annual election of officers for the Board of Directors of the Association re-

sulted as follows, District No. 1, J. B. Rumberg and Terry J. Cooke; District No. 2, F. W. Parrott of Portage la Prairie. Dr. J. B. Rumberg is the President, Dr. W. J. Riley is the Vice-Pres. Dr. J. F. Morrison is Secretary-Treasurer and Registrar.

A pleasing event of the evening was a presentation of tokens of appreciation of services rendered organized dentistry in Canada by three of the older members of the Manitoba Dental Association namely, Dr. M. H. Garvin, Dr. H. J. Merkeley and Dr. J. F. Morrison.

British Columbia

It happens every year. Although the **Vancouver and District Dental Society** spends much of its funds in bringing to our coastal city outstanding clinicians every month of the active season, the greatest enthusiasm and the largest crowds seem to be reserved for Home Talent Day, which was held this year at the beginning of February in the Hotel Vancouver. Representing considerable time and sacrifice on the part of the participants (and we venture to say a great deal of benefit also), these clinics were presented:

Afternoon Chair Clinics — (Patients in Attendance)

"Complex Amalgam Fillings in Broken Down Teeth" (Vancouver Pedodontic Study Club) — Dr. O. F. Wright.

"Increased Operating Speed Using Diamond Stones & Carbides" — Drs. S. B. Smordin and M. J. Waterman.

"Esthetic & Cosmetic Considerations in Denture Construction" — Drs. R. I. Yorsh and T. A. Cacchioni.

"Practical Demonstration of a One-Hour Foil" (Inter City Gold Foil Study Club) — Dr. John Gansner.

"Application of the Rubber Dam & Use of Separator" (Vancouver Ferrier Gold Foil Study Club — Dr. K. A. Oviatt.

"Demonstration of Occlusal Correction" — Dr. W. R. Scott.

"Simplified X-Ray Technique for the Pedodontia Patient" — Dr. R. J. O'Neill.

"The Child & His Thumb (Film) plus a Discussion on Thumb Sucking" — Dr. A. M. Hayes.

Film Presentation — "Use of Stainless Steel Crown in the Broken-Down Primary Tooth" — Drs. H. W. Helm, D. J. Yeo, J. A. Michaelson, R. A. Mitchell.

Evening Table Clinics

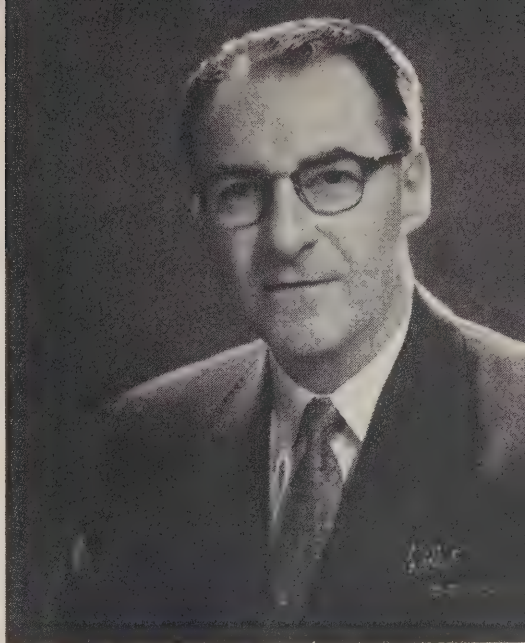
"Palliative Orthodontics & the Utilization of Quick Setting Acrylics" (Vancouver Pedodontic Study Club) — Drs. J. C. Rife and M. Panar.

"Place of Endodontics in Oral Diagnosis" (Vancouver Endodontic Study Club) — Drs. T. K. Cragg and J. B. Wolfe.

"Tissue Retraction for Hydrocolloid Impression" — Dr. J. H. Merrell.

"Simplifying Removal of Teeth" — Dr. F. A. Smith.

"Amalgam" — Dr. L. O. Lind.



Dr. E. E. MARTIN, President,
B.C. Dental Association

Photo—R. H. Marlow

"Efficient Utilization of Dental Assistants' Services" — Dr. R. I. Yorsh.

"Types of Stabilized Base Plates" — Drs. G. C. Darts, H. L. Purdy, W. A. Rutledge, J. M. Wark.

"Oral Diagnosis & Case Presentation" (Oral Diagnosis Study Club) — Dr. R. A. J. Burton.

"Introduction to Hypnosis in Dentistry" — Dr. F. K. Berry.

"Common Orthodontic Problems of the Mixed Dentition" — Dr. A. M. Hayes.

"Partial Dentures" — Dr. C. R. Hallman.

"Presentation of the Pedodontia Treatment Plan to the Parent" — Dr. G. M. Jinks.

There was a large attendance at the January meeting of the **Victoria and District Dental Society** held in the Empress Hotel on January 16th when Dr. John Gansner of Vancouver was the guest lecturer. His topic was "The Use of Hydrocolloid Impression Material in Crown and Bridge Work." Dr. Gansner, an outstanding operator, illustrated his talk with slides and models to show castings produced by various techniques. The thanks of the Society were tendered by Dr. Jack Dohan. D. H. M.

Formation of a dental clinic for Tynehead School has been decided upon by the **Parent-Teacher Association**, if enough parents are interested. A questionnaire will be sent to all homes to secure the opinion of the parents.

This project was discussed at the January meeting held recently. Guest speakers were Miss E. Beattie of the Boundary Health Unit and Mr. Bennett of Harold Bishop P.T.A.

F. Van der Ree won the door prize at this meeting. Refreshments were served by Mrs. R. Robinson and her committee.



Certificate of life membership being presented to Dr. M. F. Hogan by Dr. J. M. Darcy, President of the Society. Left to right: Dr. M. F. Hogan, Dr. J. M. Darcy.

Newfoundland

At a special dinner held in his honour at the Newfoundland Hotel, November 29th, **Dr. M. F. Hogan** was honoured with Life Membership in the **Newfoundland Dental Society**.

He was presented for Life Membership by Dr. E. P. Kavanagh, and the Certificate was presented by Dr. J. M. Darcy, President of the Society.

In making the presentation, Dr. Kavanagh spoke highly of Dr. Hogan and his contribution to Dentistry. A past president of the Association, Dr. Hogan has been active in its work since he began practice in 1923.

Born in Carbonear, Newfoundland, in 1897, he received his early education in his home town before coming to St. Bonaventure's College in St. John's. He graduated from Dalhousie Dental School in 1923 and has practised in St. John's ever since. In 1930 he was made a Fellow of the International College of Dentists, the only Newfoundlander to be so honoured. In 1936 he was elected to Membership in The Eastern College of Anaesthetists, after a period of post-graduate training in New York.

Dr. Hogan is also a member of the Elks, Rotary, Bally Haly Golf Club, Murrays Pond Country Club, the Curling Association, Benevolent Irish Society, Knights of Columbus and the St. Bon's Old Boys Association. He is Chief of Dental Services at the General Hospital and visiting dentist at the Sanatorium.

About twenty dentists, their wives and guests attended the dinner. Special guests were Dr. and Mrs. Hogan and their three daughters; Dr. L. Miller, Deputy Minister of Health; and Mr. James G. Higgins, Q.C., who was the guest speaker for the evening.

The Third Annual Convention of the **Newfoundland Dental Society** was held at Corner Brook, November 2nd, and was attended by a representative group of dentists from all parts of the Province as well as Dental Officers from the United States Air Force Base at Harmon Field.

The Society was fortunate in having as special guests this year, Dr. R. R. McIntyre, President, Canadian Dental Association; and Dr. D. W. Gullett, Secretary of the C.D.A. The President of the Newfoundland Society, Dr. J. M. Darcy, conducted the business meetings, during which reports from the different committees were read and adopted.

Two most interesting talks were given by members of the Corner Brook Hospital Staff. Dr. W. D. Rowe spoke on "Fractures of the Mandible"; and Dr. N. F. Walsh spoke on "X-Ray Interpretation". An excellent clinic on "Construction of Full Dentures for Cleft Palate Cases" was given by Dr. J. Hann.

The Panel Discussion on Organized Dentistry conducted by Dr. McIntyre and Dr. Gullett in which all those present participated, was most interesting and informative, and gave the members a better insight into the problems of Organized Dentistry.

The Annual Dental Dinner was held at the Glynmill Inn, at which the special speakers were Dr. R. R. McIntyre; Mr. Albert Martin, General Manager of Bowaters Pulp and Paper Mills; and Dr. E. S. Peters of the West Coast Clinical Society.

Election of officers for the following year resulted as follows:

President — Dr. J. M. Darcy
1st Vice Pres. — Dr. Wilson King
2nd Vice Pres. — Dr. M. F. Hogan
Sec. Treas. — Dr. D. K. Peters

During their stay, the visiting dentists were graciously entertained on several occasions by the Corner Brook dentists and their wives, and are greatly indebted to them for the hospitality extended to them during their stay.

Ontario

On Saturday, January 14, the **Thunder Bay Dental Association** held its annual dinner meeting at the Royal Edward Hotel in Fort William. The business conducted was the election of officers for 1956. Those elected were as follows:

President — Dr. Wyatt Macdonald
Vice-President — Dr. W. M. F. Kostyshyn
Past President — Dr. Cecil Shaffer
Secretary-Treasurer — Dr. John V. Siren

An out-of-town guest was Dr. Albert Kaukinen of Sudbury. Representing the various professions and bringing greetings were: D. A. Manore, Thunder Bay Pharmaceutical Association; A. A. Kajander, Thunder Bay Law Association; Dr. F. Dennis, Thunder Bay Medical Association; S. Halter, Lakehead Branch of the Engineering Society of Canada.

A toast to the Royal College of Dental Surgeons was proposed by Dr. Siren and replied to by Dr. J. Egan. Dr. Arne Kaukinen proposed a toast to the Queen. Toasting the University of Toronto was Dr. T. Harry Hutchinson with Dr. Marvin Keenan making the reply.

In his presidential address, Dr. Shaffer gave a review of a successful year's work.

J. S.

The Kingston and District Dental Society held its annual ladies' night on January 21st, 1956, at La Salle Hotel. There were about 20 dentists and their ladies at the meeting, guests being present from Toronto, Brockville, and Sharbot Lake. Each lady received a favor as she came in and Dr. Harvey Campbell toasted the ladies during the course of the dinner. Mrs. Alan O'Hara replied to this toast.

Dr. John Lyon, the president of the Dental Society, was in the chair for the meeting. This was an exceptional occasion for the dental society took the opportunity to honor two of its outstanding members, Dr. W. R. Glover and Dr. E. B. Sparks, by presenting them with honorary life memberships in the local association. Both these gentlemen have just completed 50 years in dental practice and have also received honorary memberships in the Royal College of Dental Surgeons of Ontario.

Dr. Harry Stewart presented each of the 50-year men with an engraved plaque. Dr. Sparks and Dr. Glover each spoke in a reminiscent vein about the changes that have taken place in dentistry during their years of practice.

Dr. L. Durant brought greetings from the Brockville Dental Society and also spoke of the outstanding achievements of the two honored members.

Following the presentations two films were shown and then dancing was enjoyed by those present.

The Kingston and District Dental Society co-operated with the dental public health committee of the Ontario Dental Association to present on December 16th, and 17th, 1955, a post-graduate dental seminar program in the offices of two Kingston dentists, Dr. C. F. Sørensen and Dr. M. K. Davis. Twenty-



DENTISTS HONORED—Two Kingston dentists received presentations Saturday, January 21st., 1956, from the Kingston District Dental Society for practising 50 years in the profession. Both Dr. Ernest Sparks, second from left and Dr. W. R. Glover, second from right are still active dentists. Looking on are, Dr. John Lyon, president of the society, and Dr. Harry Stewart, member of the society and former mayor of Kingston. Presentations were made at a ladies' night meeting of the society in La Salle Hotel. Films, dancing and bridge followed the dinner meeting.

Photo—Dick H. Kingston

two dentists were fortunate enough to see and hear the top-level instruction of Dr. C. H. M. Williams, Professor of Periodontics, and Dr. S. A. MacGregor, Associate Professor of Paedodontics of the Faculty of Dentistry, University of Toronto.

Dr. Williams was interviewed on a radio program and Dr. MacGregor appeared on television to discuss dental public health activity.

A dinner meeting was presided over by Dr. R. E. Feasby, chairman of the seminar committee. The Mayor of the City was at the dinner, as well as the Chiefs of Paediatrics of the two city hospitals, representatives of the school boards and the City Health Department. The Ontario Dental Association was represented by Dr. E. E. Johns, a member of the Board of Governors. Dr. E. A. White and Dr. G. T. Mitton appeared on behalf of the dental public health committee of the Ontario Dental Association.

Dentists Dr. P. E. Currie, Dr. R. J. Wainwright and Dr. J. B. Taylor were elected to the Public Health and Public Relations Committee of the **London and District Dental Society** at a meeting in the Hotel London recently. They will hold office for three years.

Eighty members of the society attended the meeting to hear Lt. Col. I. A. L. Millar, commandant of the Royal Canadian Dental Corps School at Ottawa, speak on the control of haemorrhage in dental surgery. He was introduced by Lt. Col. R. Clayton, R.C.D.C., and thanked by Dr. C. L. Strachan.

Next meeting of the society will be February 18 when a panel discussion will be presented on organized dentistry with representatives from the Ontario Dental Association and the Canadian Dental Association.

Saskatchewan

The **Saskatoon Dental Society** opened the fall term with a guest clinician, Dr. J. Parsons of New Westminster, B.C. His subject covered "Operative Dentistry for Children under General Anesthesia."

In subsequent meetings of the Society pertinent subjects were discussed. Dr. A.

Singer led a discussion on the question of a revised fee schedule for Old Age Pensioners for the Saskatoon area. A Pre-Fluoridation survey was discussed. Upon the advice of Dr. Dantow, the Public Health Officer for this city, such a survey would be best done by one of the senior governments. A Post Payment Plan was instituted in Saskatchewan in December 1955, the first long term financing plan to be arranged in Canada. Dr. Locke was the leader in this movement and was capably assisted by Dr. A. E. Chegwin, and Dr. R. Dickson. The year concluded with the Christmas party at the Armouries.

General News

Development of a **new dental X-ray machine** that takes a "panoramic" x-ray picture of the whole mouth in about 40 seconds was announced recently by the Government.

The announcement said the device makes it possible to reduce to less than five minutes the overall time required for a dentist to make a "full mouth" survey — compared with 20 minutes required under present techniques that involve taking 14 separate "pictures" of different areas of the mouth.

The announcement said the new machine should be particularly useful to the armed forces in making rapid dental surveys of personnel who enter and leave the service — and to communities making mass surveys of school children's teeth.

In the new technique, a roll of film is placed outside the patient's mouth and is exposed by passing a narrow beam of x-rays through his head from the rear, as he sits in a chair.

The x-ray source and film holder are suspended from opposite ends of a horizontal arm that rotates in a semi-circular path. Thus, a picture of the whole mouth is taken in one movement, and then the opposite side is filmed — with the whole survey being recorded on a single strip of film.

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Another chapter of evidence on the value of **fluoridation of public water supplies** was

completed when final reports were presented on the Newburgh-Kingston program in New York. "The Newburgh-Kingston study has demonstrated beyond question of a doubt the effectiveness and the safety of water fluoridation as a public health procedure," Dr. Herman E. Hilleboe, commissioner of the New York State Department of Health, told the New York Institute of Clinical Oral Pathology on Monday evening December 12th. Dr. Hilleboe appeared on a panel with three other investigators in the 10-year program which began on May 2, 1945 in the two New York state towns situated 35 miles apart on the Hudson River, each with a population of about 35,000. Sodium fluoride was added to the Newburgh water supply to bring it up to a level of 1 to 1.2 parts fluoride per million parts of water while Kingston's water supplies remained virtually fluoride-free. Reductions in dental caries for Newburgh children as compared with Kingston children averaged about 60 per cent. Others appearing with Dr. Hilleboe were Dr. David B. Ast, director of the Bureau of Dental Health of the New York State Department of Health; Dr. Edward R. Schlesinger, associate director of medical services of the New York State Department of Health and assistant clinical professor of pediatrics at the Albany Medical College, and Dr. Harold C. Hodge,

professor of pharmacology at the University of Rochester School of Medicine and Dentistry.

A.D.A. News Letter, December 15, 1955.

Dental school enrollments increased 54 per cent in the last 10 years, according to the 1955-56 Dental Students' Register issued by the **A.D.A. Council on Dental Education**. The total undergraduate enrollment for this year, 12,730, is up 129 over 1954 and 4,443 over 1946. According to Dr. Shailer Peterson, Council secretary, the number of dental graduates increased 96 per cent during the eight-year period from 1949 to 1955. Currently, half of all students now have at least four years of college training before entering dental schools. Dental hygiene schools also show an increase in both enrollments and graduates. The number of graduates rose from 575 to 857 between 1951 and 1955, an increase of 49 per cent. Enrollments rose from 1,454 to 2,009. Copies of the Dental Students' Register are available without charge upon request to the Council on Dental Education at A.D.A. headquarters.

A.D.A. News Letter, December 15, 1955.

In February 1955 the various **American Medical Association Councils** expanded their programs and discontinued the Seal of Acceptance program. Notice of this appeared in an editorial in the Journal of the American Medical Association of February 19, 1955. The Council on Pharmacy and Chemistry notified by mail all those drug manufacturers who participated in the Seal of

Acceptance program of the fact and advised them to discontinue use of the Seal or any reference to acceptance by the American Medical Association or any of its Councils or Committees in either labelling or promotional material not later than August 15, 1955. By and large splendid cooperation has been received in this matter. However, there are still some drug manufacturers using the Seal and advising some Canadian dentists that those manufacturers not using the A.M.A. Seal have had it taken away.

Obviously from the foregoing this is sheer misrepresentation.

President Eisenhower recently called on Congress to provide increased funds for basic research in the health fields. In his special health message, the President again asked for an appropriation of \$2,971,000 for the **National Institute of Dental Research**, as detailed earlier in the administration's proposed budget for the new fiscal year. The amount requested for dental activities represented only 2.3 per cent of the total budget requests of \$126,525,000 for all seven National Institutes of Health. As was expected, the President also asked Congress to set up a five-year federal fund of \$250,000,000 for matching grants to assist in construction of research and teaching facilities. Of the total, it is expected that \$40 million will be available for schools of dentistry. The President called for the training of more dentists and other personnel to help meet the increasing demand for health services.

A.D.A. News Letter,
February 1, 1956

British Commonwealth News

A **Government Inquiry Committee** recently recommended that Britain's nationalized health service make cuts in charges for dental services and eyeglasses.

The five-man committee also called on the Government to spend more money on modernizing hospitals and to aim at £30,000,000 as a "desirable rate" of capital expenditure a year for the seven years succeeding 1957-58.

Under the present health setup, dental patients pay a maximum of £1 for treat-

ment. The committee said persons who have a regular yearly checkup should be excluded from the fee.

It contended that the 30 shillings charge now made for eyeglasses constituted a barrier to persons who needed glasses and a high priority should be given to cutting that fee.

The committee was appointed to find ways of trimming the national health bill which has risen to a cost of £430,300,000 a year. But it produced no direct economy recommendations.

In Memoriam

Teal, Glenn Evelyn — Dr. Glenn Evelyn Teal of Ridgeway, Ontario passed away suddenly on January 15, 1956. He was 59.

Born in Ridgeway, Dr. Teal was educated in the local schools and entered the University of Toronto Dental School in 1916. In 1917 he enlisted with the Canadian Dental Corps and served overseas until armistice was signed. He then re-entered University, graduating in 1921, and immediately began the practice of dentistry in Ridgeway.

Dr. Teal was a member of Memorial United Church, having served as Sunday School Superintendent for 10 years, as a Tuxis leader and on the board of Stewards for a number of years. He was a charter member of the first Ridgeway Scout Troop and served for many years as a Scout leader in the community.

He was a charter member of the Lions Club of Ridgeway, and a past master of the Masonic Lodge of Ridgeway. He also served as secretary of this lodge for a number of years. He was also a member of the Niagara District Dental Association.

Dr. Teal served with the R.C.A.F. in the Dental Corps for four years during the Second World War.

Dr. Teal is survived by his wife, Nettie Wills and one daughter Mrs. James Whittingham, of Richmond Hill. A son, Keith, predeceased his father in September 1943 while serving in the R.C.A.F.

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Jamieson, A. Eldon — Dr. A. Eldon Jamieson of Edmonton, Alberta passed away January 19, 1956. He was 77.

Born in Carleton County, Ontario, 20 miles west of Ottawa, he received his early education in Ontario and took his degree in dentistry at Trinity College, Toronto.

He went to Alberta in 1895, settling in the Lacombe district, where he established a practice. In 1906, he moved to Edmonton and practised continually there until he retired 10 years ago.

During the First World War, Dr. Jamieson served as a captain in the Royal Canadian Army Dental Corps in France from 1915 to 1918. He was attached to the Railway Battalion, commanded by Col. Jim Cornwall.

Dr. Jamieson is survived by two brothers, John Henry and Frederick Charles, both of Edmonton.

•
Jackson, Joseph Edgar — Dr. Joseph Edgar Jackson of London, Ontario passed away on January 19, 1956. He was 59.

Born in Berkeley, Grey County, Dr. Jackson received his early education at Dundalk

High School and later graduated from the Royal College of Dental Surgeons of Ontario in 1923. He first practised in Georgetown and Mitchell and in 1945 moved to London and became the School Dental Officer for the Board of Education.

Dr. Jackson was an adherent of the Church of the Redeemer and a member of the Tweedsmuir branch of the Canadian Legion. Dr. Jackson served overseas with the 4th Battalion in World War I and spent five years in the Royal Canadian Dental Corps in World War II. He was a member of the London Dental Society.

He is survived by his wife, Helen and his daughter Judith and son Joseph and two stepsons Donald and Paul Bradley.

•
Gilroy, George Frederick — Dr. George Frederick Gilroy of Toronto passed away on January 28, 1956. He was 80.

Dr. Gilroy was born and educated at Mount Forest and was a 1904 graduate of the Royal College of Dental Surgeons of Ontario. He practised in Toronto until 1945, when he moved to Leaside and continued his profession until a year and a half ago.

He was an Honorary Member of the Royal College of Dental Surgeons and of the Academy of Dentistry. He was a member of Ulster Lodge, A.F. and A.M., and a member of the United Church of Canada.

Dr. Gilroy is survived by his wife, the former Mary Isabel Hanna and a son, Frederick W. Gilroy.

•
Hansen, Edward Bellamy — Dr. Edward Bellamy Hansen of Deep River, Ontario, passed away on February 2, 1956. He was 60.

Dr. Hansen was born in Cleveland, Ohio, where he received his early education. He was a graduate of Western Reserve University, Ohio, and the Faculty of Dentistry, Toronto. Dr. Hansen began his practice in Cleveland, Ohio, but after the Second World War he was associated with the National Research Council at Deep River, Ontario. Latterly he was in private practice at Deep River.

During the First World War Dr. Hansen served with the American Army and during the Second World War he was a Major with the R.C.D.C. at Chorley Park Military Hospital. He was commissioned by the Navy as Lieutenant-Commander but preferred to remain with the R.C.D.C.

He was a member of the Renfrew and District Dental Society, and belonged to the Ornan Masonic Lodge, Cleveland Heights.

Dr. Hansen is survived by his brother, Dr. E. H. Hansen of Cleveland Heights, Ohio.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1956

Banff, Alberta

June 3rd-6th

1957

Winnipeg, Manitoba

June 23rd-26th

FUTURE EVENTS

Date	Function	Location	Officer	Address
April 3	Vancouver and District Dental Society Meeting	Vancouver	Dr. J. H. Merrell	217 Medical-Dental Bldg., Vancouver 1, B.C.
April 20	First Dental Education Workshop	New York	Dr. A. J. Asgis	First District Dental Society, 7 East 42nd St., N.Y. 17, N.Y.
May 1	Vancouver and District Dental Society Annual Meeting	Vancouver	Dr. J. H. Merrell	217 Medical-Dental Bldg., Vancouver 1, B.C.
May 13-16	O.D.A. Convention	Toronto	Mrs. R. E. Booker	234 St. George St., Toronto, Ontario.
May 14	2T6 Reunion Dinner, 6:30 p.m.	Toronto	Dr. Anthony Vince	646 Danforth Ave., Toronto, Ontario.
May 14	3T1 Twenty-fifth Reunion	Toronto	Dr. R. E. Martin	1466 Bathurst St., Toronto 10, Ontario.
May 17	Vancouver and District Dental Society's Spring Golf Tournament	Vancouver	Dr. J. H. Merrell	217 Medical-Dental Bldg., Vancouver 1, B.C.
May 17-19	B.C. Dental Assoc. Convention	Vancouver	Dr. K. R. McWilliams	217 Medical-Dental Bldg., Vancouver, B.C.
June 17-21	Berkshire Conference in Oral Pathology and Periodontology	Lennox, Mass.	Tufts University School of Dental Medicine	136 Harrison Ave., Boston 11, Mass.
June 21-24	American Academy of Dental Medicine Meeting	Detroit	Dr. G. J. Witkin	45 South Broadway, Yonkers 2, N.Y.
June 22	West Toronto Dental Society Golf and Dinner	Islington	Dr. J. R. Glenney	3242 Bloor St. W., Toronto, Ontario.
June 27, 28 and 29	Maritime Dental Association Convention	Halifax	Dr. E. F. Dexter	5 Dutch Village Rd., Halifax, N.S.
Oct. 17, 18 and 19	Montreal Dental Club Annual Fall Clinic	Montreal	Dr. Bruce Ward	1414 Drummond St., Montreal, P.Q.
Sept. 7-14, 1957	Congrès de la Fédération Dentaire Internationale	Rome, Italy	G. H. Leatherman	Secretary, London, England.

The Class of 3T6 is planning their twentieth year reunion party to take place during the O.D.A. Convention this May 13-16 at the Royal York Hotel. For further information contact Dr. Meredith Twible, 2 Bloor St. East, Toronto, Ontario.

The Class of 1T6 will hold a reunion to celebrate the fortieth anniversary of graduation during the O.D.A. Convention May 13-16 at the Royal York Hotel. For further information contact Dr. E. G. Berry, 2 Clarendon Ave., Toronto 5, Ontario.

SHORT GRADUATE COURSES

Tufts School of Dental Medicine announces the following short courses:

April 9-13	Periodontology
April 6-May 4	Electrosurgery
June 4-8	Full Denture Prosthesis

Address communications to: Dr. Irving Glickman, Director, Division of Post-Graduate Studies, 136 Harrison Avenue, Boston, Mass.

Northwestern University announces fifteen short post-graduate courses during the 1955-56 academic year. For further information write the Director of Dental Post-graduate Study, Northwestern University Dental School, 311 East Chicago Avenue, Chicago 11, Illinois.

New York University announces a five day course in Occlusal Equilibration from June 11-15, 1956. For further information contact: Secretary, Post-graduate Division, New York University College of Dentistry, 209 East 23rd Street, New York 10, N.Y.

University of Toronto, Faculty of Dentistry announces the following short courses:

April 23-27	Periodontics
April 30-May 4	Dental Oral Surgery and Anaesthesia

Address communications to: The Chairman, Division of Post-graduate Studies, Faculty of Dentistry, University of Toronto, 230 College Street, Toronto, Ont.

The American Institute of Dental Medicine continues to offer Case Histories from the broad field of Dental Medicine. These will include original 35 mm. Kodachrome slides of the oral condition, pertinent laboratory findings, medical background, roentgenograms, histologic slides, etc. For further information contact: Mrs. C. Novembri, 2240 Channing Way, Berkeley 4, Cal.

The Graduate School of Medicine of the **University of Pennsylvania** and the Riesman Dental Clinic, Beth Israel Hospital, Boston, Massachusetts announce the twenty-month graduate training program in Periodontology. This course is under the chairmanship of Professor Henry M. Goldman. A certificate will be awarded at the end of the second year upon successful completion of the course.

The Department of Post-graduate Studies of **Temple University** announces a Four-Day Participating Course, May 3, 4, 5, 6, 1956 in "Occlusion and What To Do About It" under the direction of Bernard Jenkelson, D.M.D. of Seattle, Washington. For further information contact: Dr. Louis Herman, Director of Post-graduate Studies, Temple University School of Dentistry, 3223 North Broad Street, Philadelphia 40, Penn.

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Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

Evaluation in vitro du pouvoir bactériostatique des ions OH- produits par la technique d'ionophorèse

par GEORGES PELLETIER D.D.S. et GEORGES PERREAULT D.D.S., M.S., Montréal

Bernard ⁽¹⁾ a développé un raffinement de la technique d'ionisation et a perfectionné un appareil au moyen duquel il est possible de produire des ions OH- par l'électrolyse du sérum physiologique contenu dans le canal radiculaire. Il attribue à cet ion OH des propriétés qui permettraient un nettoyage et une stérilisation des canaux beaucoup plus rapides que par les techniques classiques.

Dionne ⁽²⁾ rapporte une série de cas cliniques impressionnante où la régénération des tissus périapicaux est spécialement rapide.

But du travail—Le présent travail se propose d'évaluer en laboratoire le pouvoir bactériostatique des ions OH- et d'établir une comparaison avec le pouvoir bactériostatique des autres médicaments couramment employés en endodontie.

Matériel et méthodes

Les bactéries étudiées sont des streptocoques et des staphylocoques non-hémolytiques isolés des canaux infectés.

Six souches différentes ont servi dans les diverses épreuves. Des cultures pures seules ont étéensemencées sur gélose-sang. Des rondelles de papier filtre imprégnées des médicaments à éprouver sont placées sur gélose ensemencée sur la totalité de sa surface. L'incubation est de 18 à 36 heures à 37°C.

Vingt-deux géloses ont servi à l'étude.

Les médicaments employés furent:

1- Une pâte polyanthibiotique à base de pénicilline, chloromycétine et d'antihistaminiques. ⁽³⁾

2- Un antiseptique couramment employé, le para-mono-chloro-phénol camphré.

3- Une solution de sérum physiologique, additionnée de 5 gouttes de phénolphtaléine par 100 cc. L'indicateur colorant permet de vérifier la formation des ions OH. Dans cette solution, le déplacement ionique est obtenu par un courant d'une intensité de 3 à 4 milliampères. La différence de potentiel choisie a été de 30 volts de façon à pouvoir donner une dose

de courant de 1 à 3 décicoulombs, le plus rapidement possible, diminuant ainsi le danger de contamination des géloses.

L'électrolyse est faite en deux dérivation. Dans 12 cas, le pôle positif et le pôle négatif reposent tous deux sur la rondelle de papier. Les ions, ainsi déplacés, n'ont pas tendance à sortir du papier. Dans 10 cas, au contraire, le pôle positif est placé à 25 millimètres de la rondelle portant le pôle négatif. Cette dérivation tend à favoriser la diffusion des ions OH en direction du pôle positif.

Afin de contrôler chacun des facteurs en jeu, on s'est en plus assuré de trois témoins. Dans 6 cas, on a employé des rondelles de papier stériles, ne portant aucun médicament. Dans 22 cas, des rondelles imbibées d'une solution de soude à 5%, témoignaient de l'activité de l'ion OH, lié à un métal. Tandis que dans 12 cas, la rondelle portait le sérum physiologique et la phénolphthaléine, mais ne recevait aucun courant électrique.

De plus, on a appliqué les médicaments sur deux géloses stériles afin de mettre en évidence l'effet des médicaments sur la gélose en l'absence de bactéries.

Résultats.

Après incubation, les bactéries doivent pousser sur toute la surface de la gélose, sauf dans les zones d'action des médica-

ments. On considère que le médicament est actif, lorsqu'il inhibe la croissance des bactéries dans un rayon plus grand de 3 millimètres que le papier filtre.

Les lectures obtenues étaient très constantes et les différences si marquées que nous avons en plus tenté d'établir un index quantitatif en employant la mesure du rayon des zones stériles comme index d'activité des médicaments.

Au moment de la lecture, il était aussi possible de voir une zone d'hémolyse et une zone d'apparence laiteuse probablement due à la précipitation des protéines de la gélose sous l'action caustique du médicament. Les rayons de ces deux zones ont aussi servi d'index de l'action hémolytique et caustique respectivement.

Les zones produites sur les géloses stériles et sur les géloses ensemencées sont identiques; elles représentent donc uniquement l'action des médicaments.

Le papier stérile et le chlorure de sodium non traité n'ont en aucune sorte inhibé la pousse des bactéries; ils n'ont pas eu d'action hémolytique et n'ont produit aucune zone laiteuse. Les effets, notés autour des autres disques, étaient donc uniquement ceux des ions OH, des antibiotiques, du para-mono-chloro-phénol et de la soude, respectivement.

Le tableau I donne le détail observé dans chacun des cas.

TABLEAU 1

		Pâte poly-antibiotique	Soude 5%	Ionophorèse	Para-mono-chloro-phénol
Hémolyse	Maximum	15	4	8	25
	Minimum	4	0	0	10
Action bactériostatique	Cas négatifs	0	22	17	0
	Maximum	30	5	10	22
	Minimum	8	0	0	4
Rapport hémolyse-action bactériostatique		42	335	44	158
		100	100	100	100

Le nombre de cas négatifs représente le nombre de cas où les médicaments n'ont pas inhibé la croissance des bactéries. Les index d'hémolyse et d'action bactériostatique sont représentés par la mesure en millimètres des zones produites sur la gélose par les médicaments. L'index d'hémolyse nous renseigne sur l'intensité de l'action destructrice des médicaments sur les globules rouges. L'index d'action bactériostatique représente l'influence du médicament sur la croissance des bactéries. Le rapport hémolyse-action bactériostatique nous renseigne sur le degré d'hémolyse produit par chacun des médicaments pour une action bactériostatique fixée arbitrairement à 100.

Le nombre de cas négatifs représente le nombre de cas où les médicaments n'ont pas inhibé la croissance des bactéries. Les index d'hémolyse et d'action bactériostatique sont représentés par la mesure en millimètres des zones produites sur la gélose par les médicaments. L'index d'hémolyse nous renseigne sur l'intensité de l'action destructrice des médicaments sur les globules rouges. L'index d'action bactériostatique représente l'influence du médicament sur la croissance des bactéries. Le rapport hémolyse-action bactériostatique nous renseigne sur le degré d'hémolyse produit par chacun des médicaments pour une action bactériostatique fixée arbitrairement à 100.

La soude à 5% n'a manifesté qu'une action bactériostatique et hémolytique très faible, elle n'a produit aucune zone laiteuse.

L'action hémolytique du para-mono-chloro-phénol a été la plus forte de toutes. La zone d'inhibition bactérienne était beaucoup plus faible que la zone hémolytique et à peu près égale à la zone laiteuse.

C'est la pâte polyantibiotique qui a manifesté l'action bactériostatique la plus étendue de toutes. Son action hémolytique était nettement inférieure et la zone laiteuse nulle.

Dans le cas du chlorure de sodium traité, les deux dérivations du courant ont donné des résultats identiques. La zone laiteuse était nulle et l'action hémolytique peu appréciable. L'action bactériostatique variait avec la dose de courant employée. A 1 décicoulomb, elle était nulle et apparaissait dans quelques cas à 2 et 3 décicoulombs, sans toutefois atteindre une surface comparable à celles qu'ont produites le para-mono-chloro-phénol ou la pâte polyantibiotique.

Discussion

Le para-mono-chloro-phénol semble détruire les globules rouges dans un rayon plus grand que celui dans lequel il effectue les bactéries. Par ailleurs, le fait que la zone laiteuse et la zone d'inhibition bactérienne soient égales, nous porte à sup-

poser que ce médicament agit par son effet caustique sur les bactéries.

La pâte polyantibiotique semble inhiber la croissance bactérienne à distance tout en n'affectant que très peu les globules rouges et en ne détruisant pas les protéines de la gélose.

Dans le cas du chlorure de sodium électrolysé, il semble que l'action du courant soit la même "in vitro" qu'elle ne l'est "in vivo". En effet, durant l'application du courant, le virage au rouge de la phénolphthaleïne indique la formation d'ions OH et la mousse électrolytique se forme en abondance sur la rondelle de papier tout comme elle se forme dans le canal. Cependant, les ions OH ont manifesté dans ces épreuves une action bactériostatique nettement inférieure à celle des médicaments classiques. Ce fait devient encore plus évident si l'on considère que la dose de courant employée approchait la dose clinique recommandée (3 décicoulombs) alors que, dans le cas des médicaments, on n'a employé qu'une fraction de goutte.

Ces faits viennent en contradiction avec les théories apportées habituellement pour expliquer l'excellence des résultats cliniques. Il semble impossible d'admettre qu'un seul traitement électrolytique puisse stériliser un canal dentaire à moins qu'entre en jeu un facteur autre que l'action bactéricide des produits formés par l'électrolyse. Ceci est en accord avec les épreuves cliniques faites par Tremblay, qui, dans trente cas, n'a pu obtenir que peu de cultures négatives après une seule application de courant. ⁽⁴⁾

Par contre, les résultats cliniques excellents, démontrés par de nombreuses radiographies, forment une évidence qu'il ne nous est pas permis d'ignorer. Nous serons donc forcés d'admettre, soit qu'un autre facteur que les propriétés antiseptiques de l'ion OH entre en jeu, ce qui est peu probable, soit que la stérilité lors de l'obturation du canal n'est pas essentielle au succès du traitement.

La régénération osseuse observée après les traitements à l'ionophorèse aurait

donc pris place à l'apex de canaux qui n'auraient pas été absolument stériles au moment de l'obturation.

Par ailleurs, l'observation clinique démontre que, dans ces cas, la régénération osseuse est habituellement plus rapide que dans le cas de canaux traités par les méthodes conventionnelles, habituellement au paro-mono-chloro-phénol, et dont la stérilité est parfaite lors de l'obturation.

Nous émettons donc l'hypothèse de travail suivante qui, même si elle n'est pas contrôlée, tente de jeter un peu de lumière sur les faits.

Lorsqu'un canal est traité au para-mono-chloro-phénol jusqu'à ce qu'il soit parfaitement stérile, toutes les bactéries seraient détruites, autant dans le canal que dans le périapex, par l'action caustique du médicament. Cependant, les tissus périapicaux subiraient aussi cette action caustique et il y aurait formation d'un escarre à l'apex. De plus, nous avons vu que le para-mono-chloro-phénol détruit les globules rouges du sang dans un rayon encore plus grand que celui dans lequel il détruit les bactéries. En plus de la formation d'un escarre, il y aurait donc une

action hémolytique plus ou moins prolongée, ce qui ne manquerait pas de retarder la régénération osseuse.

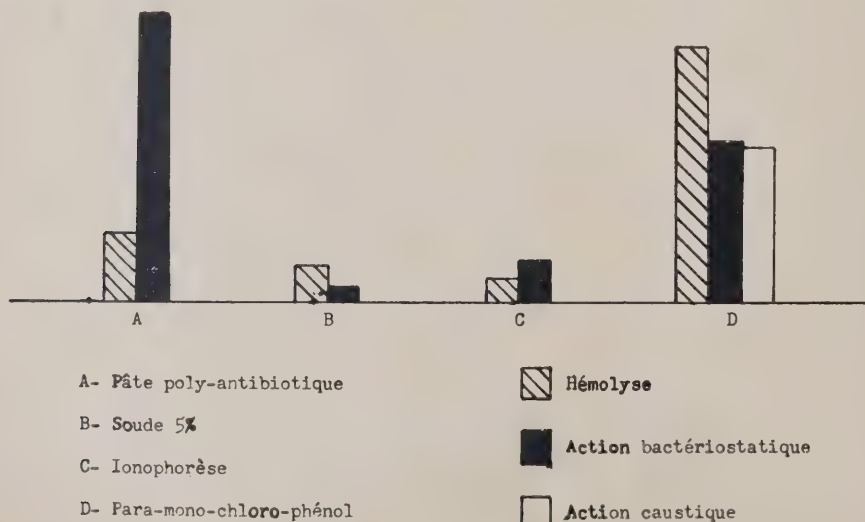
Par ailleurs, dans le cas des canaux traités à l'ionophorèse, les quelques bactéries restées après le nettoyage mécanique seraient tenues en échec surtout par les moyens de résistance habituels de l'organisme. Les ions OH n'ayant aucune action hémolytique ou caustique, la guérison aurait lieu à l'apex au rythme normal et non à un rythme retardé comme dans le cas des canaux traités au para-mono-chloro-phénol.

Ce que nous avons interprété comme une guérison accélérée due à l'ionophorèse, ne serait en réalité qu'une guérison effectuée à un rythme normal, et ce que nous avons cru être un rythme de guérison normal, après les traitements classiques, serait en réalité, un rythme ralenti.

Conclusions

1- Le passage de courant électrique dans une solution physiologique de chlorure de sodium semble conférer à celle-ci un pouvoir bactériostatique qu'elle n'aurait pas autrement.

TABLEAU 2



L'étendue de l'action hémolytique, bactériostatique et caustique des divers médicaments est représentée dans ce graphique.

2- Cette action semble toujours demeurer inférieure à celle des médicaments courants en endodontie et semble insuffisante pour stériliser le canal en un seul traitement.

3- Ces faits ne nient pas les résultats cliniques obtenus par la technique d'ionophorèse mais demandent une révision de nos concepts quant au mode d'action de cet appareil.

4- Nous avons émis une hypothèse qui tente d'expliquer à la fois les faits expérimentaux et les faits cliniques.

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Ionophorèse et son rendement en clinique

par PAUL DIONNE, Joliette, Qué.

Le but de l'article précédent n'était pas d'entreprendre une polémique interminable, mais d'essayer d'une façon désintéressée de trouver la valeur (déjà contestée) de l'ionophorèse ainsi que le mode d'action des ions OH. Je félicite les auteurs de leur travail; ce sont d'excellents observateurs et dans l'ensemble, ils révèlent des "faits vrais" au sujet de l'ion OH. Cependant, différant d'opinion dans certaines de leurs considérations, je désire souligner ou du moins compléter ce qui manque à leur article et renseigner mes lecteurs d'une façon définitive et concrète sur la valeur indiscutable de l'ionophorèse en regard de toute autre méthode ici préconisée à date.

Les auteurs ont raison quand ils concluent: "ces faits demandent une révision de nos concepts quant au mode d'action . . .", car jusqu'ici, les médicaments employés, tel le paramonochlorophénol et autres, étant très puissants, ne laissent aucun doute quant à leur pouvoir bactéricide, mais laissent l'organisme dans un état de stupeur, détruisant les globules rouges en quantité considérable, et laissent l'organisme plus faible devant un travail à accomplir. Aussi, les résultats concrets ne sont constatés que tardivement, lorsqu'il y a guérison totale, et au surplus, les cas d'apectomie sont encore trop fréquents à la suite des traitements dits "classiques". Tandis que la méthode

ici préconisée est plutôt ce qu'on pourrait appeler un "facteur guérisseur" très rapide, et son processus explique le "pourquoi" des résultats rapides et impressionnants, ainsi que le dit l'article précédent.

L'ionophorèse, enseignée par la totalité des Universités européennes, a été depuis longtemps un sujet d'étude très discuté de la part de médecins et dentistes éminents, diplômés en bactériologie et en microbiologie. Encore une fois, tout comme Pierre Fauchard apporta à l'Amérique les premières notions de l'art dentaire, nous pouvons encore accepter une méthode qui a fait ses preuves depuis une dizaine d'années, et qui a été améliorée savamment, grâce au Dr Pierre BERNARD, de Paris. Jusqu'ici, au cours des nombreuses conférences données depuis deux ans, je me suis toujours abstenu de faire des comparaisons avec les autres méthodes employées, mais puisqu'on m'a devancé, je me sens plus à l'aise pour y aller de quelques commentaires.

Environ 130 confrères travaillent actuellement avec l'ionophorèse dans le Québec, et n'ayant pour ma part que les expériences cliniques de quelques 295 cas faits à date avec d'heureux résultats, je ne commenterai que quelques opinions émises et dont je diffère, puis j'utiliserai dans la suite les écrits du Dr BERNARD, afin que l'on comprenne bien la valeur des trois processus suivants: ionophorèse,

obturation à l'hydroxyde de calcium et thérapie diadynamique; car il faut admettre que, en général, les étudiants et les dentistes n'ont pas été préparés à recevoir cet enseignement nouveau. Bien plus, certains se sont mêlés de "juger" l'ionophorèse, sans n'y rien connaître.

Les auteurs ont raison dans la majorité de leurs conclusions; mais là où je ne suis pas d'accord, c'est qu'après avoir admis l'efficacité clinique de la technique d'ionophorèse, ils déclarent que "son action demeure inférieure à celle des médicaments courants en endodontie et semble insuffisante pour stériliser le canal en un seul traitement". Cette attitude semble paradoxale, car tous les cas cliniques dont il a été question au début et qui semblent les avoir impressionnés n'ont subi qu'une seule séance d'ionophorèse, mais suivant la gravité du cas. Cependant, il y a des cas où une seconde et même troisième séance s'avérera nécessaire.

Disons donc immédiatement que l'ion OH n'a pas du tout une action bactériostatique, comme un toxique microbien. On ne peut dire également que c'est un médicament; mais comme l'explique le Dr BERNARD, "c'est le fragment alcalin de toutes les bases ($\text{NaOH} - \text{HOH} - \text{Ca}(\text{OH})^2$) et de ce fait, il a une action chimique organolytique, c'est-à-dire qu'il dissout les matières organiques (lipides — glucides et protides) et également les corps microbiens, lorsqu'il est à une concentration suffisante et à une température supérieure à 35° ."

Afin de reconnaître le pouvoir bactériostatique des différentes substances employées sur un milieu de gélose, on s'est basé sur la mesure du rayon des zones d'action demeurées stériles, pour en conclure un index d'activité des médicaments. Or la zone d'inhibition des disques ne peut servir d'index pour l'appréciation "quantitative" de l'action bactériostatique. Les bactériologistes cliniques savent depuis longtemps qu'il ne faut pas tenter d'interpréter "quantitativement" les antibiogrammes faits à l'aide de disque imprégnés d'antibiotiques ou de substances bactéricides. On se contente de dire, si pour une concentration donnée, il existe

ou non une zone d'inhibition de l'organisme en question. De plus, il est bien connu de tous ceux qui se servent de disques pour les tests de sensibilité que la pénicilline et la chloromycétine diffusent facilement dans la gélose et donnent de "vastes zones" d'inhibition comparativement aux autres antibiotiques. Quant à la zone d'hémolyse, il est loin d'être prouvé que la zone d'escarre "in vitro" correspond à la zone d'escarre "in vivo". Mais considérant cette étude dans son ensemble, je réfère aux écrits de BERNARD, qui dit: "dans une gélose, lorsqu'il y a simplement de la soude NaOH , cette soude commence à détruire la structure organique de la gélose et les quelques microbes qui sont à son contact direct, mais en même temps, la soude se détruit pour donner des sels organiques stables de sodium et HOH (eau)". Cette action est donc très localisée, et il s'agit d'une action chimique de contact, et pas du tout d'une action bactério-toxique à distance.

Par ailleurs, voici ce qu'on lit dans le *TEXTBOOK of BACTERIOLOGY* de Jordan & Burrows, édition 1941, au chapitre: *Effect of Physical and Chemical Agents on Bacteria*, page 65: "The disinfectant action of alkalis such as sodium hydroxide is likewise proportional to the degree of dissociation. The germicidal activity of the hydroxides of the alkaline earths is, however, greater than can be accounted for on the bases of dissociation, for the metallic ion is often toxic in itself. Both acids and alkalis in too low a concentration to kill bacteria rapidly often enhance the activity of other disinfecting agents. For example, the germicidal activity of many salts is greater in the presence of acid or alkali and, as noted above, bacteria are killed much more rapidly by heat in the presence of dilute acid or alkali than at neutrality".

Toujours selon BERNARD: "lorsque l'on fait agir le courant, l'électrolyse produit des ions OH (exactement ceux de la soude) et au fur et à mesure qu'ils se combinent avec les matières organiques de la gélose, ces ions sont renouvelés par l'électrolyse. Par ailleurs, ils s'éloignent du pôle négatif par phorèse. Voilà pour-

quoi l'action est plus étendue avec l'ionophorèse qu'avec la soude simple, bien qu'il s'agisse du même élément OH".

En passant, que l'on note bien ceci: la coloration rouge de la phénolphthaléine provoquée par les ions OH, disparaît progressivement dans le temps, au fur et à mesure que les ions OH entrent en combinaison chimique avec les produits organiques. Que se passe-t-il dans ces conditions dans l'endodonte? Nous avons débarrassé toute la partie largement accessible des canaux de leur contenu organique par des moyens mécaniques et nos "manoeuvres chimiques" par la soude et mieux encore par le bioxyde de sodium, détruisent le reliquat de matières organiques qui seraient restées sur les parois. Ce passage préalable à l'ionophorèse est indispensable, sinon les ions OH seraient absorbés et annihilés par le contenu organique abondant et il faudrait une quantité de 20 à 30 décicoulombs pour détruire cette matière organique de l'endodonte largement accessible. C'est ce que font d'ailleurs les auteurs allemands qui ne procèdent pas au nettoyage préalable de l'endodonte largement accessible, et ils ont écrit: les doses de BERNARD, c'est-à-dire de 2 à 6 décicoulombs, sont très insuffisantes. Ils ont raison, puisqu'ils demandent à l'ionophorèse de faire tout le travail du nettoyage et de détruire les matières organiques abondantes, dont il est si facile de se débarrasser par le bioxyde de sodium".

A ces auteurs allemands, le Dr BERNARD reproche ceci: "dans ces conditions, leurs applications sont nécessairement très longues et nous ne pouvons pas apprécier la quantité de matière organique à détruire. On ne sait jamais quelle quantité de décicoulombs il faut appliquer et on risque de faire trop ou trop peu et rarement la dose juste. Aussi je préconise ceci: débarrasser l'endodonte largement accessible des débris organiques et il ne restera à détruire par l'ionophorèse que la matière organique et les bactéries des portions inaccessibles de l'endodonte et des noyaux secondaires. La quantité de cette matière est donc réduite à sa plus simple expression et

alors, les quantités prescrites de 2 à 6 décicoulombs sont suffisantes pour dissoudre cette matière organique réduite".

Voici d'ailleurs une expérience qui est très démonstrative: si l'on fait un simple nettoyage mécanique de l'endodonte, sans nettoyage chimique au bioxyde ou à la soude, et si l'on place l'électrode assez loin dans la profondeur du canal, seules seront désinfectées par l'ionophorèse les portions de canaux situées au-delà de l'extrémité de l'électrode. Quant aux canaux larges, situés en deçà de la pointe de l'électrode, ils seront à peine stérilisés par la mousse (si encore il y en a) ou même pas du tout stérilisés et si l'on obture le fond du canal, si l'on place une mèche stérile dans la portion intérieure du canal, cette mèche seraensemencée. Elle donnera une culture positive. Elle peut même avoir une odeur caractéristique de persistance de l'infection, alors que les portions ramifiées et inaccessibles des canaux à l'apex seront parfaitement stérilisées et la lésion apicale pourra guérir parfaitement". (Ceci répond à la phrase de l'article précédent lorsqu'il est question des travaux de Tremblay).

D'ailleurs, les Dr BENDER et SELTZER parlant des avantages et désavantages des antibiotiques, (Journal de l'A.-D.C., Nov. 1954, page 617) disent ceci: "The antibacterial activity of the antibiotics is transferred to the culture broth by means of paper point in taking the culture. Inasmuch as inactivors have not yet been developed for certain antibiotics which are used in endodontics, the validity of the negative bacteriologic culture becomes questionable. Small traces of antibiotics, particularly when used in combinations, may produce a growth inhibition in the cultural tube. Negative cultures obtained following antibiotic treatment must be regarded as questionable in 13 per cent of the cases".

Dans une étude intitulée: Bacteriology of Infected Root Canals and in Vitro Penicillin Sensivity, de G. L. SLACK, (Year Book of Dentistry, page 37, édition 1955): "From the 514 root canals, pure cultures were obtained in 405 cases; two organisms were present in 95 cultures

and three organisms in 14. Alpha and gamma streptococci were the organisms most often encountered". "And what about the antibiotic-resistant organisms produced in the dental region?" Ce à quoi répond le Dr BEHRMAN, dans le *New York State Dental*, Sept. 1955: "It is predicted that root canal infections will become more and more stubborn to antibiotic treatment".

L'ion OH n'est pas, à proprement parler, bactériostatique, mais par l'ionophorèse, il fait un nettoyage des portions inaccessibles de l'endodonte où précisément les autres produits, *aussi bactériostatiques soient-ils*, ne peuvent pénétrer que très difficilement ou même pas du tout.

J'ai prononcé un jour, la phrase suivante (BERNARD): "peu importe le procédé d'exécution du microbe; l'essentiel est de l'atteindre, et quand on l'a atteint, il n'est pas nécessaire d'avoir un agent bactéricide extraordinaire; une simple action chimique comme celle de l'ion OH est suffisante".

Voilà pour la première conception qui est différente de la conception classique d'après laquelle on croyait que l'état morbide d'une dent infectée était due à une résistance particulière des microbes contre lesquels il fallait rechercher des antiseptiques ou des antibiotiques extraordinaires, alors que l'état morbide est dû simplement à la situation cryptique (cachée) des microbes qui sont ainsi protégés contre les agents bactéricides dans des anfractuosités et des ramifications apicales de l'endodonte. L'ionophorèse a le simple mérite de faire pénétrer dans ces régions inaccessibles l'ion OH, modeste antiseptique.

Dans la région apicale, et c'est toujours le Dr BERNARD qui parle: "l'ion OH n'a absolument pas provoqué une action bactéricide". Il faudrait des doses considérablement plus fortes et qui provoqueraient des brûlures caustiques lorsque ces doses arriveraient au contact des tissus sains autour du granulôme, et là réside la deuxième conception nouvelle qu'il faut acquérir. Comme on le dit en médecine générale, le microbe n'est rien. Les dé-

fenses de l'organisme sont l'essentiel. Or, si, dans l'endodonte, nous avons un milieu qui n'a pas subi l'action des défenses de l'organisme, il n'en est pas de même dans la région apicale où ces défenses peuvent être effectives. Malheureusement, presque tous les médicaments usuels provoquent une inhibition de ces défenses et maintiennent un état de stupeur des tissus au milieu desquels les microbes vivent plus ou moins bien et entretiennent une infection chronique. C'est par cette inhibition des défenses que les tissus altérés sont si longs à se résorber et à se régénérer. Or les ions OH n'ont aucune action toxique sur les tissus et en raison de leur faible concentration dans la région péri-apicale où ils diffusent, ils provoquent simplement une élévation du pH vers 8 et 9, c'est-à-dire vers une alcalinité, alors que les tissus infectés ont toujours un pH acide, inférieur à 7, et précisément l'alcalinité vers 9 est défavorable à l'évolution microbienne, favorable à l'action des leucocytes et absolument *nécessaire* au processus de régénération osseuse. (l'édification du tissu osseux ne peut, en effet, s'effectuer qu'en pH voisin de 9, ainsi qu'on le constate dans toutes les zones de croissance osseuse et dans les formations de cals traumatiques). Ce qui est particulièrement nocif avec les médicaments usuels, c'est qu'ils entretiennent un pH inférieur à 7, ce qui est un obstacle à la régénération.

Le Dr BERNARD insiste sur le point que l'ion OH déclanche une régénération en élevant l'alcalinité vers 9; cette alcalinité est d'ailleurs maintenue par l'emploi de l'OCALOX, (hydroxyde de calcium), comme pâte obturatrice des canaux.

Enfin, le rôle du DIADYNAMIC, qui apparaît de jour en jour plus important, est de réduire encore le temps de régénération en provoquant un stimulus des tissus atones dans les cas d'infection chronique.

En résumé, l'hypothèse des auteurs de l'article précédent est exacte, et ce que nous avons toujours appelé une guérison de rythme normal (soit 6 à 18 mois pour voir le tissu osseux se régénérer) n'était, en fait, qu'une guérison retardée,

L'ionophorèse de OH provoque, elle, un rythme de guérison normale de 2 à 3 mois, c'est-à-dire plus rapide, à condition qu'aucune substance médicamenteuse, placée dans le canal dans un but d'obturation, ne viennent perturber cette guérison. Enfin, le Diadynamic provoque une guérison

de rythme encore plus accéléré, soit 4 semaines. Telle est l'explication de la phrase des auteurs de l'article précédent: "DIONNE rapporte une série de cas cliniques impressionnante. La régénération des tissus périapicaux est spécialement rapide".

Qu'est-ce que la Fédération dentaire internationale? (F.D.I.)

C'est l'organisation internationale de la profession dentaire dans les différentes parties du monde. Fondée en 1900, c'est une association permanente des sociétés nationales dentaires et de leurs affiliées. Actuellement 51 sociétés nationales y sont représentées.

But

Au début, l'objectif principal de la F.D.I. était l'organisation de congrès internationaux à intervalles réguliers. Puis, du fait de son évolution au cours de plus de cinquante années, la F.D.I. eut surtout pour but de faire connaître les moyens propres à développer la santé dentaire à un niveau aussi élevé que possible chez l'individu.

Fonctions

A part cela, la F.D.I. a d'autres fonctions spécifiques. Sans doute, organiser un congrès dentaire tous les cinq ans, mais encore, aider au développement de sociétés dentaires nationales dans tous les pays du monde; encourager les relations et l'échange d'informations entre ces sociétés; publier *l'International Dental Journal*; étudier et faire des rapports sur les problèmes dentaires d'intérêt international; coopérer avec d'autres organisations dentaires dans les domaines de la science et de la santé; reconnaître par des prix et des diplômes ceux qui ont contribué à l'avancement de l'odontologie; stimuler les centres de documentation pour la collection de littérature dentaire.

Financement

La F.D.I. est entièrement financée par des contributions volontaires de sociétés dentaires et de dentistes intéressés à favoriser de saines relations internationales.

L'avenir de la F.D.I.

Cet avenir dépend de l'assistance des sociétés nationales surtout. Nulle part, la moyenne de la santé dentaire n'est satisfaisante et le standard de la profession dentaire peut être encore amélioré. De plus, les divers pays commencent à réaliser qu'améliorer la santé en général est un problème universel qui peut s'améliorer en échangeant nos connaissances et en coopérant. La F.D.I. est l'instrument choisi pour répondre à ces buts. Si l'odontologie veut assurer sa voix dans les discussions globales concernant l'amélioration de la santé, elle doit avoir un agent intermédiaire, qui est précisément la F.D.I.



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Nouvelles de l'Association

FLUORURATION

Le secrétariat de l'A.D.C. a compilé les renseignements suivants au sujet de l'attitude des gouvernants du pays à propos de la fluoruration.

Déclaration des ministères de la Santé

Fédéral

Le 14 février 1955, le ministre de la Santé nationale et du Bien-Etre social répondait en Chambre ce qui suit à la question suivante: "A-t-il été prouvé catégoriquement que l'addition d'une partie de fluor à un million de parties d'eau contribuait à prévenir la carie dentaire?" —"Oui, dans une proportion de 65%. Cette constatation a été prouvée par des recherches entreprises au Canada et aux Etats-Unis, y compris les recherches menées par le Ministère de la Santé et du Bien-Etre durant les dernières huit années, en collaboration avec le Ministère de la Santé de l'Ontario, les comtés de Brant et de Lambton et la ville de Stratford."

Le 12 mars 1955, le ministre déclarait dans un discours prononcé au poste de radio C.K.O.Y., à Ottawa: "La fluoruration de l'eau des aqueducs pour combattre la carie dentaire peut bien s'avérer une des contributions les plus marquantes de notre siècle à l'hygiène des populations. L'efficacité et la sûreté de cette mesure, qui consiste à ajouter, d'une façon mécanique, à une eau déficiente en fluor, une certaine partie de ce sel pour y établir un taux d'une partie de fluor pour un million de parties d'eau, ont subi l'épreuve de tests rigides et continus depuis au delà de vingt-cinq ans. Nulle autre formule pour protéger et améliorer la santé publique n'a été étudiée plus à fond.

Depuis 1945, le Canada et les Etats-Unis ont entrepris des études cliniques sur la fluoruration et le Ministère de la Santé et du Bien-Etre a lui-même poursuivi des recherches dans ce domaine. Et comme résultat, tous ces travaux ont prouvé que l'addition mécanique de fluor à l'eau pour en augmenter sa teneur en fluor à une partie par 1 million de parties d'eau abaisse l'incidence de la carie dentaire chez les enfants d'âge scolaire dans une proportion qui varie entre 60 et 65%. Ces constatations confirment ce qu'on savait déjà avant 1945 au sujet de la carie dentaire chez les enfants et les adultes nés et élevés dans les régions, où l'eau contenait, à l'état naturel, les mêmes proportions de fluor; ces données offraient un contraste frappant avec celles recueillies chez des enfants et des adultes habitant des régions où l'eau était déficiente en fluor.

La science n'a pas trouvé que la consommation continue d'eau qui contient une partie de fluor par 1 million de ses parties constitue un danger pour la santé. Aussi puis-je dire qu'il n'existe pas de rapport écrit montrant que des personnes aient souffert de la consommation d'eau con-

tenant du fluor jusqu'à une proportion de 8 parties par un million de parties. La quantité de fluor qu'une municipalité doit ajouter à son eau de consommation pour la rendre bénéficiaire à la santé dentaire se juge par une multitude de facteurs locaux, comme l'incidence des caries dentaires chez ses enfants et par la teneur en fluor de son eau à l'état naturel. Les autorités sanitaires, médicales et dentaires d'une ville sont en mesure d'évaluer les avantages d'une telle mesure et peuvent juger des moyens à prendre pour réaliser ces avantages.

Pour ces raisons, les municipalités qui se proposent de fluorurer leur eau doivent prendre les décisions nécessaires en consultant leurs dirigeants sanitaires, tant locaux que provinciaux."

Ministères provinciaux de la Santé

Terre-Neuve

"Depuis plusieurs années, le Ministère surveille avec grand intérêt le travail de recherche accompli à l'étranger au sujet de la fluoruration de l'eau de consommation.

Au début, il semblait y avoir divergence d'opinions au sujet des avantages de cette mesure, mais maintenant on paraît fixé sur ses bienfaits et tous les milieux scientifiques ont approuvé le bien-fondé et l'efficacité de la fluoruration. Les organismes suivants se sont prononcés en faveur de cette mesure: United States Public Health Service, American Public Health Association, Dental Directors Association et soixante-trois universités américaines et canadiennes, y compris McGill, Toronto, Queen's, Saskatchewan, Colombie-Britannique, Montréal, Western Ontario, Laval, Harvard, Yale, John Hopkins, Columbia et Stanford.

Il serait donc souhaitable que les autorités compétentes de Terre-Neuve songent à établir la fluoruration de l'eau de ses aqueducs et nous sollicitons votre opinion sur la façon dont la ville de St-Jean pourrait commencer à fluorurer son eau de consommation."

le 2 juillet 1954.

Ile-du-Prince-Edouard

Aucun commentaire.

Nouvelle-Ecosse

"Le Ministère de la Santé de la province de Nouvelle-Ecosse approuve le principe d'ajuster la teneur en fluor de l'eau de consommation comme mesure préventive d'hygiène dentaire dans les villes, où la majorité des résidents le désirent, où les autorités médicales et dentaires l'approuvent et où existent des moyens sûrs de surveillance et de contrôle.

Le Ministère est prêt à conseiller et à collaborer avec les municipalités qui songent à établir cette mesure chez elles."

Nouveau-Brunswick

"A cause d'une opposition de la part de certains contribuables à la Cour Suprême contre une résolution passée au Conseil Municipal de Frédérickton en faveur de la fluoruration de son eau de consommation, il semble que l'application de cette mesure soit retardée dans toute la province. La Cour Suprême n'a pas statué sur les mérites de la fluoruration, mais sur une technicalité légale au sujet de la rédaction de la loi de santé du Nouveau-Brunswick. Le jugement dit: "Nous sommes d'avis (le texte de la loi) prohibe une mesure du genre. Il semble clair que l'addition clinique ou autre d'une substance à l'eau ne peut se faire que pour purifier celle-ci ou pour purifier ses sources d'approvisionnement." Il ne paraît pas probable qu'une législation propre à corriger cet état de choses soit présentée au cours de la prochaine session."

Québec

Le sous-ministre de la Santé de la province de Québec déclare:

"Je vous remercie pour votre lettre du 21 décembre 1955 et je tiens à vous dire que notre Ministère n'a pas été consulté officiellement pour qu'il fasse une déclaration au sujet de la fluoruration de l'eau de consommation.

Nous désirons seulement vous dire que nous approuvons la fluoruration de l'eau." le 28 décembre 1955.

Ontario

Déclaration du Ministre de la Santé de l'Ontario:

"La Division des Statistiques médicales du Ministère de la Santé d'Ontario a fait rapport au Ministre de la Santé, M. Phillips, que, depuis que la ville de Brantford a commencé à fluorurer son eau, "on a noté une diminution de l'ordre de 60% dans le nombre des caries, des dents obturées ou absentes chez la gent écolière de Brantford." Ce rapport provenait d'une étude faite par la Division sur les résultats de l'expérience conduite à Brantford, durant dix ans, de 1945 à 1955.

Le but de l'expérience de Brantford était de savoir si l'addition mécanique d'une partie et deux dixièmes de fluor à 1 million de parties d'eau abaisserait l'incidence de la carie dentaire à un taux égal à celui constaté dans les régions où l'eau contient du fluor à l'état naturel.

En marge de ce rapport, le docteur Phillips mentionne un rapport précédent d'un comité de l'Université de Toronto, où on disait qu'on croyait bonne la fluoruration de l'eau des aqueducs et qu'il ne semblait pas y avoir d'inconvénient pour la santé des personnes de tous âges. A la lumière de ces rapports, le docteur Phillips déclara: "Que l'addition d'une partie et deux dixièmes à un million de parties d'eau à l'eau des aqueducs paraissait être une mesure favorable et dénuée de tout danger. La concentration maximum ne devrait pas dépasser 1.5 parties de fluor pour 1 million de parties d'eau".

Dans le résumé de son rapport, la Division des Statistiques médicales déclare que les médecins et les dentistes exerçant à Brantford ont attesté n'avoir décelé aucun effet défavorable sur la santé de leurs patients. Cette constatation confirme des assertions faites dans d'autres rapports du même genre.

Le rapport renferme ces lignes: "Nous avons constaté l'absence de danger qu'il y a à boire de cette eau fluorurée à la concentration recommandée et tous les organismes sérieux qui s'occupent de santé publique ont fait la même chose".

Le rapport note que durant la période de dix ans, où l'eau de Brantford a été traitée au fluor, le taux de carie dentaire a baissé au niveau de celui de Stratford, où l'eau contient du fluor à l'état naturel. Avant ce temps, le taux de la carie à Brantford était aussi élevé que celui de Sarnia, où l'eau ne contient pas de fluorure.

Au sujet de la fluoruration à Brantford, le rapport spécifie qu'il en coûtera entre 12 et 17 sous, par tête, par année, pour utiliser le fluorure de sodium chimique; mais avec l'emploi du silico-fluorure de sodium on s'attend à baisser le coût à environ six sous, par tête, par année.

"Cette faible dépense suffit à réduire la carie les dents, dont le traitement coûterait de dix à vingt fois plus cher".

Le rapport mentionne que le docteur W. L. Hutton, directeur du Service de Santé de Brantford, a droit à notre reconnaissance pour avoir été le pionnier de la fluoruration au Canada et qu'on pourrait copier ses paroles pour résumer ses conclusions:

"Les recherches, qui ont été faites à Brantford durant dix ans, démontrent que la fluoruration est une mesure simple, économique, efficace et absolument sans danger".

Manitoba

"Déclaration officielle du Gouvernement au sujet de la fluoruration de l'eau. On peut dire, sans crainte d'erreur, que la question de la fluoruration de l'eau potable est assez controversée et qu'on a apporté de part et d'autre des arguments en sa faveur et pour sa condamnation. Mais la plupart des organismes de santé du Canada et des Etats-Unis ont décidé que cette mesure est sans danger et qu'elle favorise la réduction de la fréquence de la carie dentaire. Ces organismes sont les suivants:

- Association médicale canadienne
- Association dentaire canadienne
- Association canadienne de Santé publique
- Association médicale américaine
- Association dentaire américaine
- Association américaine de Santé publique
- Conseil national des Recherches
- Service de Santé publique des Etats-Unis

La plupart des opinions d'experts médicaux et dentaires peuvent se résumer ainsi:

- (1) l'organisme humain ne souffre aucun pré-

judice, si le dosage tel qu'appliqué dans les services d'aqueducs publics, ne dépasse pas 1.5 de parties d'eau;

(2) cette mesure abaisse d'une façon notable le taux de la carie dans les dents des enfants.

La source de renseignements la plus sûre paraît être les résultats obtenus par l'expérience de Brantford, en Ontario, dont le Ministère de la Santé et du Bien-Etre a parlé de temps à autre. Cette enquête a duré dix ans et les avantages dont ont bénéficié les dents des enfants sont indiscutables; de même, on n'a observé aucun détriment à la santé de la population, après qu'elle eut absorbé cette eau fluorurée.

Au Manitoba, une ville, Brandon, fluorure son eau de consommation et ce, depuis mars 1955. Notre Ministère, par l'entremise de son unité sanitaire locale et par celle de notre chimiste attitré, M. W. M. Ward, a mené des enquêtes à la centrale d'aqueduc de cette ville et nous avons constaté qu'il était relativement facile de maintenir la fluoruration dans les limites fixées.

Il n'y a pas de raison, semble-il, pourquoi les enfants ne bénéficieraient pas de la fluoruration, du moment que:

(1) les organismes médicaux sont convaincus qu'elle ne cause aucun préjudice à la santé;

(2) les dentistes approuvent officiellement son principe;

(3) l'appareillage de la fluoruration et l'organisation de son fonctionnement soient surveillés par un personnel compétent, qui travaille sous la direction d'ingénieurs sanitaires experts.

(4) la teneur en fluor de l'eau soit vérifiée avant et après son traitement et l'analyse des composés des fluorures faite souvent; l'aspect mécanique de l'opération soit dirigé au point de vue hygiène par un chimiste compétent, par exemple, un officier technique du Ministère de la Santé et du Bien-Etre Social.

Le Ministère croit que la décision de fluorurer l'eau des aqueducs doit venir des municipalités intéressées. Nous sommes convaincus que les administrateurs municipaux peuvent juger de la valeur ou des inconvénients de cette mesure et d'évaluer les sentiments des contribuables sur cette question. Par conséquent, la politique du Ministère à ce sujet s'établit comme suit: toute municipalité désirant fluorurer l'eau de son aqueduc doit en faire une demande officielle au Ministère. Du moment que la teneur en fluor de l'eau est basse et que notre personnel aura toute la latitude voulue pour exercer le contrôle nécessaire et qu'il pourra s'assurer que ces contrôles seront respectés, le ministère accordera volontiers son autorisation."

Saskatchewan

Déclaration fournie par le Ministère de la Santé publique.

"Fluoruration de l'eau de consommation en vue de réduire la carie dentaire.

Le docteur F. D. Mott, sous-ministre, a annoncé que le Ministère de la Santé publique ap-

prouve la fluoruration de l'eau des aqueducs pour les grands centres urbains de la province. Le Ministère considère que les expériences entreprises aux Etats-Unis et au Canada pour étudier cette question ont prouvé que l'addition de fluor à l'eau abaisse à coup sûr le taux de la carie dentaire chez les enfants.

"La question est réglée, déclare le docteur Mott; quand l'eau contient, à l'état naturel, entre 1 partie et 1.5 parties de fluor par 1 million de parties d'eau, il y a de 40 à 60% moins de caries dentaires chez les enfants d'âge scolaire (en rapport avec l'âge) quand ils ont consommé cette eau depuis leur naissance.

Dans plusieurs régions des Etats-Unis et du Canada, à Brantford, où le Ministère fédéral de la Santé et du Bien-Etre fait des recherches d'envergure sur la question, on a formulé des conclusions évidentes sur la valeur de cette mesure. Fortes de ces expériences, d'autres municipalités, comme Grand Rapids, dans le Michigan, Nemburg, dans New York, et Evanston, dans l'Illinois, ont élaboré d'une façon très spécifique des recherches similaires pour s'assurer de la valeur de la fluoruration artificielle de l'eau d'aqueduc. Ces travaux ne sont pas encore complètement terminés, mais les rapports à date montrent que la fluoruration diminue catégoriquement la fréquence de la carie dentaire chez les enfants. C'est pourquoi, nous croyons qu'il y a eu assez d'expériences prouvant l'efficacité de cette mesure et que les agglomérations urbaines sont justifiées d'entreprendre la fluoruration de leur eau de consommation".

L'eau de l'aqueduc de Brantford, en Ontario, est fluorurée artificiellement depuis juin 1945 et le Ministère de la Santé et du Bien-Etre d'Ottawa, depuis ce temps, y fait des recherches sérieuses. Il est trop tôt, cependant, pour que le Ministère fédéral publie des rapports définitifs, parce que des études du genre prennent plusieurs années, avant qu'on puisse en tirer des conclusions finales.

Le docteur Mott fait remarquer que l'Association américaine de Santé publique (qui renferme plusieurs organismes professionnels de gens intéressés au domaine de la santé, tant du Canada que des Etats-Unis) et l'Association dentaire américaine ont approuvé la fluoruration de l'eau potable. A ce sujet, l'Association américaine de Santé publique a adopté la résolution suivante, en novembre 1950: "Attendu que la fluoruration des eaux de consommation favorise une diminution partielle de la carie dentaire, tel que la démontrée, sans l'ombre d'un doute, toute une série de recherches entre prises à cet effet, il est résolu qu'on recommande cette mesure comme sûre et efficace pour diminuer la fréquence de la carie dentaire".

Le docteur Mott demande que toutes les municipalités qui sont intéressées à cette mesure, communiquent avec le Ministère de la Santé publique. Les divisions d'Hygiène dentaire et de Salubrité désirent collaborer, par tous les moyens possibles, avec les municipalités qui désirent installer chez elles la fluoruration. Le Ministère

fédéral de Santé nationale et du Bien-Etre social a indiqué au Ministère de la Santé publique de Saskatchewan qu'il est à son entière disposition pour lui fournir tous les renseignements qu'il possède au sujet de la fluoruration".
le 4 mai 1951.

Alberta

Commentaires reçus du Ministère de la Santé:

J'ai en mains votre lettre du 21 décembre où vous demandez une déclaration officielle du Ministère au sujet de la fluoruration.

Nous n'avons jamais fait de déclaration officielle à ce sujet. Cependant, en faveur de cette mesure, je crois qu'il faut dire que la province d'Alberta a présenté un rapport au Conseil des Recherches d'Alberta au sujet de la fluoruration de l'eau de consommation. Ce rapport fait preuve d'impartialité et se déclare évidemment 100% en faveur de cette mesure".

le 29 décembre 1955.

Colombie-Britannique

Déclaration publiée dans le rapport annuel du Ministère de la Santé.

Fluoruration:

"Jusqu'à récemment, les moyens pratiques et acceptés de tous d'enrayer la carie dentaire ne permettaient d'entrevoir pour l'avenir une amélioration notable de l'hygiène dentaires qu'une fois que les habitudes de vie personnelles seraient changées. Cependant, ces dernières années, le Ministère a noté avec grand intérêt les preuves de plus en plus abondantes des bienfaits de la fluoruration artificielle des eaux de consommation, qui ne contiennent pas une teneur suffisante en fluor. C'est pourquoi, cette année, en face de cette évidence qui s'affirme de jour en jour, le Ministère a crû bon de changer sa politique au sujet de cette mesure. Et cette politique fut amendé de la façon suivante:

"A la lumière des preuves qui lui sont fournies, le Ministère encourage fortement les dirigeants des municipalités, où la fluoruration pourrait s'appliquer d'une façon pratique et dont les autorités sanitaires et en général ceux qui se préoccupent de la santé publique y approuvent le principe de cette mesure, à adopter la fluoruration; toutefois le Ministère désire examiner leurs projets, avant de les approuver. "Cependant, en ce faisant, le Ministère tient à faire remarquer que la fluoruration n'est qu'un autre moyen de combattre la carie dentaire et que sa mise en pratique ne doit pas signifier l'abandon de toutes les autres mesures.

"De plus, comme les municipalités qui pratiqueront la fluoruration seront en mesure d'ajouter aux statistiques qui existent déjà, et comme il serait convenable que ces municipalités puissent prouver à leurs contribuables, dans l'avenir, le bien-fondé de cette application scientifique, le Ministère demande que ces municipalités

compilent des statistiques sur les affections dentaires d'une portion raisonnable de sa population infantine, avant et pendant la fluoruration, à des intervalles réguliers.

Il faut se rendre compte de l'importance de cette mesure, dans le domaine préventif dentaire; on croit maintenant, que la fluoruration, utilisée conjointement avec les autres méthodes de prévention, laisse entrevoir, pour la première fois un rayon d'espoir dans un avenir rapproché où les maladies dentaires pourront être contrôlées et où tous ceux qui souffriront des dents pourront les faire traiter.

Le Ministère s'efforcera, cette année, de fournir au personnel de la santé publique, aux membres des professions médicale et dentaire et à tous les citoyens que la chose intéresse toute la littérature traitant les bienfaits que donne une mesure, qui, pour la première fois, contrôle une maladie dentaire d'envergure, autrement que par un apport individuel. Il faut réaliser que toutes les municipalités n'utiliseront pas tout de suite la fluoruration. La chose se produira quand une portion suffisante de la population en aura saisi l'importance et sera convaincue de ses avantages et de l'absence totale de ses inconvénients. La Division d'Hygiène dentaire du Ministère s'emploiera, cette année, à répandre au sein de la population des notions approuvées par des chercheurs qualifiés dans ce domaine".

Statut de la fluoruration au Canada

(au 1er janvier 1956)

Municipalité	Début de la mise en pratique	Population
Brantford, Ont.	20 juin 1945	50,000
Fort Erie, Ont.	18 jan. 1952	8,500
Thorold, Ont.	12 fév. 1952	7,500
Sudbury, Ont.	29 août 1952	58,000
Moose Jaw, Sask.	déc. 1952	27,000
Deep River, Ont.	9 déc. 1952	2,800
Oshawa, Ont.	26 fév. 1953	42,000
Assiniboia, Sask.	mai 1953	2,250
Swift Current, Sask.	oct. 1954	9,000
Point Claire, Qué.	3 fév. 1955	14,000
Weyburn, Sask.	mar. 1955	7,500
Toronto Twp., Ont.	28 mar. 1955	23,000
Smithers, C.B.	21 juin 1955	2,000
Saskatoon, Sask.	juil. 1955	60,000
Prince George, C.B.	13 sept. 1955	12,000
South Porcupine, Ont.	3 oct. 1955	8,200

Résumé Statistique de la fluoruration au Canada (au 1er janvier 1956)

année	nombre de municipalités utilisant la fluoruration	total de la population desservie
1950	1	50,000
1953	8	198,050
1954	9	207,050
1955	17	355,750

Revue de travaux

Anesthésie générale lors d'interventions buccales Résultats obtenus avec divers anesthésiques

par F. RUSPA, professeur à Turin

Notre expérience personnelle repose sur au moins 1500 interventions pratiquées durant une période de seize années.

1. Nos observations cliniques journalières nous montrent ses avantages sur les autres moyens risquant d'être douloureux (ouverture de phlegmons, kystes suppurés, abcès et en général dans toute intervention de caractère septique).
2. Les douleurs postopératoires sont supprimées, ce qui n'est pas toujours le cas lors d'extractions ou d'autres interventions sous anesthésie loco-régionale.
3. Dans la première enfance, il est plus aisé de faire des interventions grâce à ce moyen, qui évite la répulsion instinctive des enfants pour l'anesthésie locale.
4. L'anesthésie générale permet en même temps plusieurs extractions dans différentes parties de la bouche.
5. Le perfectionnement de la technique et des appareils, la présence de l'anesthésiste et la visite préventive d'un spécialiste cardiologue, tous trois travaillant en pleine collaboration, assurent un minimum de risques.

Nous avons toujours fait nos interventions le matin, sauf dans des cas d'extrême urgence.

Dans 18 cas, la visite médicale conclut à une contre-indication à l'égard de l'anesthésie générale.

Sur 1539 interventions, 1523 furent exécutées ambulatoirement, 16 ont nécessité une hospitalisation.

Dans 1472 cas, on a pratiqué une véritable anesthésie générale, tandis que dans 51 cas on s'est limité à une analgésie inconsciente.

Quant à la technique employée, dans 19 cas, ce fut sous circuit ouvert (enfants de la première enfance). Dans 1296 cas, ce fut le circuit semi-fermé et dans 8 cas (patients amenés à la clinique) l'anesthésie fut à circuit fermé avec intubation endotrachéale.

Dans tous les cas, le patient est opéré sur un fauteuil d'opération normal, incliné légèrement en arrière.

Tant la préanesthésie que l'anesthésie de base et les myorelaxeurs (curare) ne furent employés que pour les patients de clinique, jamais pour ceux se présentant ambulatoirement, qui furent capables de laisser la salle d'opération sans nécessiter d'aide, quelques dizaines de minutes après leur réveil.

Les anesthésiques employés dans les cas ambulatoires ont été les suivants:

Protoxyde-oxygène	568 cas
Protoxyde-éther-oxygène	299 cas
Protoxyde-trichloréthylène-oxygène	397 cas
Trichloréthylène-oxygène	32 cas
Chlorure d'éthyle	219 cas
Barbituriques endoveineux	8 cas

Dans 7 cas d'anesthésie générale à intubation exécutés à la clinique, le cyclopropane fut employé.

Enfin, disons que ces interventions ont été faites sur des patients de 18 mois à 83 ans.

L'anesthésie générale est encore recommandée dans les cas d'idiosyncrasie à l'égard de substances anesthésiques locales, et aussi chez les patients au psychisme si déficient qu'il est impossible de les convaincre.

L'anesthésique le plus indiqué pour des enfants de 1 à 8 ans est le chlorure d'éthyle à cause de sa rapidité d'induction. Par contre il n'est guère recommandé pour les adultes.

Pour les adolescents, le mélange protoxyde-oxygène est le plus indiqué; par contre, il s'est montré insuffisant pour les adultes surtout chez ceux s'adonnant à la boisson, et également dans les interventions complexes.

Pour les adultes, les meilleurs résultats, soit dans les anesthésies ambulatoires, soit dans certaines interventions en clinique (ouverture de phlegmons) sont obtenus avec le mélange protoxyde-éther-oxygène.

Dans les analgésies inconscientes, pour des interventions simples, on a constaté l'excellent effet du trichloréthylène (Inalène ou Trilène).

Dans les interventions plus complexes de la cavité buccale, là où l'anesthésie idéale est celle à circuit fermé par intubation endotrachéale, c'est le cyclopropane ou le protoxyde-éther précédé d'une préanesthésie ou d'une anesthésie de base avec des barbituriques qui est recommandable. Mais il n'est pas possible d'exécuter ambulatoirement un tel type de narcose.

Médecine et Hygiène, 20 déc. 1955

Méthode personnelle pour la construction de prothèse magnétiques

par F. RUSPA

Il y a quelques années que la force magnétique est utilisée en plus des forces habituelles (gravité, adhésion, tension superficielle, différences de pression, etc.) pour rendre une prothèse plus stable, lorsque ses moyens de rétention laissent à désirer.

Plusieurs types d'aimants ont été proposés qui ont une propriété commune; les pôles de même signe étant face à face, se repoussent et assurent à la prothèse, par une légère pression contre la crête alvéolaire, une stabilité plus grande.

Cependant, tous les blocs magnétiques du commerce, que nous avons expérimentés, présentent un grave inconvénient.

Les pôles de l'aimant inférieur qui devraient repousser ceux de l'aimant supérieur, en réalité les repoussent dans toutes les directions de l'espace. Il en résulte que lors d'un faible mouvement de la mandibule et par conséquent de la prothèse inférieure dans le sens de la latéralité ou de la propulsion, les deux aimants n'étant pas strictement opposés, le résultat devient désastreux.

(C'est précisément ce qu'autrefois nous avons déjà signalé, lors de l'apparition de ces blocs magnétiques. *Réd.*)

Notre nouveau dispositif consiste à créer une surface plus grande entre les aimants antagonistes, en augmentant le nombre de ces derniers. Ainsi, dans les mouvements de diduction de la mandibule, il reste toujours au moins un pôle sur l'ensemble, en opposition avec les pôles homonymes, assurant ainsi une répulsion suffisante pour la rétention de la prothèse.

Technique d'empreinte aux hydrocolloïdes

par F. RUSPA

Depuis l'introduction du "*Dentocoll*" il y a de nombreuses années par l'Angleterre, plusieurs maisons ont fabriqué des hydrocolloïdes, qui, comme chacun le sait, sont à base d'agaragar.

Pour obtenir des résultats réguliers, les conditions de travail, soit *durée*, soit *température*, doivent être rigoureusement contrôlées. Il est donc indispensable d'utiliser un appareil spécialement étudié, car toute manipulation faite au hasard ne peut donner que des résultats décevants.

Ce genre d'empreintes est particulièrement recommandé dans les constructions de bridges complexes, avec couronnes $\frac{3}{4}$, dents à tenons, etc.

On peut, avec la même empreinte, faire plusieurs modèles et surtout terminer le travail sur ces derniers, sans séances intermédiaires avec le patient.

Les hydrocolloïdes, contrairement aux matières à base de caoutchouc qui ne peuvent s'adapter exactement aux angles des fonds de cavités, s'introduisent avec aisance dans ces derniers ou au collet des dents, assurant par là une très grande précision dans le travail.

L'appareil, pour la préparation de l'empreinte, comprend trois réservoirs à thermostat, l'un à 82°, toujours prêt à recevoir l'hydrocolloïde à bouillir pendant 8 minutes; un autre réservoir à 65° pour recevoir au moins pendant 5 minutes les seringues déjà stérilisées et le troisième réservoir à 36° pour assurer l'attédiement des porte-empreintes.

Quant aux porte-empreintes, ils doivent être spéciaux, munis de tubes refroidisseurs pour la circulation d'eau.

Les appareils pour conditionner les hydrocolloïdes peuvent se fabriquer aisément à l'aide de matériaux très simples. Car s'il en existe dans le commerce, ils présentent souvent des inconvénients.

L'appareil américain de Thompson est le meilleur, mais les réservoirs sont trop petits. Ceux de la maison Kerr et d'autres ont leurs réservoirs tellement à l'étroit, qu'il est difficile de conserver une température constante.

Pour tirer le plus grand profit d'une empreinte en hydrocolloïde, il faudrait pouvoir poser le porte-empreinte chargé, à plat dans le réservoir à refroidissement, ce que ne permettent pas les petits appareils.

Une empreinte totale a de nombreux avantages en ce sens qu'elle permet d'effectuer des inlays en même temps et à divers endroits de la bouche. En plus, elle facilite l'enregistrement des dents antagonistes lors d'un travail prothétique important.

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The Brantford-Sarnia-Stratford fluoridation caries study-1955 report

by *H. K. BROWN, D.D.S., D.D.P.H., *H. R. McLAREN, D.D.S., D.D.P.H.,

**G. H. JOSIE, M.Sc., M.P.H., **B. J. STEWART, B.A.

This report by the Dental Health Division, Department of National Health and Welfare, considers the situation in Brantford following ten years of fluoridation. For comparative purposes, the summaries of the program in Newburgh, New York following the same period of fluoridation are given in the Abstract section of the Journal. Ed.

INTRODUCTION

On June 20th, 1955, Brantford completed ten years of experience with mechanically fluoridated water.

Earlier reports ⁽¹⁾ have shown that the full decay-preventing effect of the fluoridated water on the permanent dentition of the Brantford children began to show itself in 1951, when the first permanent molars appeared in the mouths of the children born there in 1945. In 1953, after these teeth had been exposed in the mouths of the eight-year-old children for

a period of two years our reports showed that they were found to be as decay-resistant as those of the children in the corresponding age group in Stratford, where water fluoridated to the extent of 1.6 parts per million from an underground deposit of fluoride had been in use continuously for thirty-eight years. This was the first clear demonstration that mechanically fluoridated water was as effective as naturally fluoridated water in the prevention of tooth decay. It was further confirmed by the 1954 survey. The 1955 survey, which is reported here, contributes additional data which are presented and analyzed in the succeeding pages.

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PURPOSE AND HISTORY OF STUDY

Before the Brantford water supply was fluoridated a great deal of information had been assembled from various parts of the world, which showed beyond any reasonable doubt that water containing 1 to 1.5 parts per million of fluoride, dissolved out from underground deposits, could be consumed safely, and would greatly reduce the incidence of tooth decay, particularly among those consuming it from birth ⁽²⁾. Questions were raised in some quarters as to whether or not the caries inhibiting effect might depend upon other chemical substances with which the fluoride could be associated. There was no evidence from the field of chemistry to suggest this. It appeared to be highly probable that the fluoride itself was entirely responsible for the reduction in tooth decay. It is a common constituent of the earth's crust, readily available, and not costly. This situation gave rise to hope for a simple inexpensive way to prevent tooth decay, especially among children. As it was well known that such trace quantities as one part per million in a water supply could be safely consumed, it was decided to find out whether or not the raising of the fluoride content of a previously fluoride-deficient water supply to one part per million by the mechanical addition of sodium fluoride would reduce the incidence of tooth decay as effectively as one part per million of fluoride derived by the passage of water through an underground deposit of fluoride.

In 1947 a study was instituted in which the caries prevalence of Brantford children would be compared periodically with that of a city having a naturally fluoridated water supply, and also with that of a city having no fluorides in its water supply. Planning and organization of the study was done by the Research and the Dental Health Divisions of the Department of National Health and Welfare. Sarnia, the fluoride content of whose water is negligible, and Stratford, whose water supply had contained 1.6 parts per

million of fluoride continuously since 1917, agreed to serve as controls. These two cities were known to be comparable to Brantford except for the fluoride content of their water supplies.

The first survey was made in 1948, and subsequent surveys in 1951, 1953, 1954 and 1955. In this report the 1955 data have been analyzed in comparison with those of 1948, with a view to showing the change in caries prevalence which has occurred during the seven-year period of 1948-1955.

SELECTION AND METHOD
OF EXAMINATION OF CHILDREN

The numbers of children comprising the study groups in Sarnia, Brantford and Stratford are shown on Table I. The sampling procedure was that described in previous reports ⁽¹⁾ and in "A Suggested Methodology for Fluoridation Surveys in Canada ⁽³⁾". All examinations in this, as in previous surveys were carried out by the same examiner (HKB). They were performed under standardized conditions as described in earlier reports ⁽¹⁾.

TABLE I
TOTAL CHILDREN ELIGIBLE AND TOTAL
EXAMINED, BY AGE GROUP
Brantford, Sarnia and Stratford, 1948 and 1955

	Age Group	Sarnia	Brantford	Stratford
1948				
Total Eligible	6-8	677	963	511
No. Chosen for Exam.		*	624	*
No. Examined		669	619	505
Total Eligible	9-11	580	816	434
No. Chosen for Exam.		*	602	*
No. Examined		571	595	432
Total Eligible	12-14	495	747	376
No. Chosen for Exam.		*	600	*
No. Examined		486	593	371
1955				
Total Eligible	6-8	815	1,321	767
No. Chosen for Exam.		576	528	548
No. Examined		571	508	541
Total Eligible	9-11	581	846	494
No. Chosen for Exam.		*	529	*
No. Examined		573	522	485
Total Eligible	12-14	500	769	438
No. Chosen for Exam.		*	538	*
No. Examined		485	523	434

*No sampling performed.

Census population, 1951: Brantford, 36,727; Sarnia, 34,697; Stratford, 18,785. Sarnia survey area includes Point Edward which is served by the Sarnia water supply, but not other outlying areas annexed in 1953.

FINDINGS

This report presents data showing the extent of change in caries-prevalence which has taken place in Brantford between 1948, when the Department of National Health and Welfare did its first survey, and 1955.

The Stratford data are presented, as in previous reports, for the purpose of showing the degree of caries reduction which the Brantford children might be expected to attain, after sufficient time had elapsed for those born since the inception of fluoridation (June 1945) to produce a full set of permanent teeth. This requires about 12 years from time of birth. As yet only the permanent teeth of the Brantford 6-8 age group may be compared with those of the corresponding Stratford age group with any reasonable expectation of finding an equal degree of caries resistance.

In the sections following, data from the 1948 and the 1955 surveys are presented in respect to (1) all permanent teeth, (2) first permanent (six-year) molars, (3) permanent upper incisors and (4) primary teeth. Statistics are given separately for the first permanent molars since these are the permanent teeth which first reach the stage of having been fully calcified during the period of fluoridation, and also for the reason that they are the most caries-vulnerable tooth of the permanent dentition. In the case of the upper permanent incisors, which demonstrate more dramatically than any other teeth the caries-preventing effect of fluoride, the opportunity is afforded too of observing the topical effect on enamel which had been wholly or partially calcified before the initiation of fluoridation. Except for permanent upper incisors and primary teeth, data are presented for each of the three age groups, 6-8, 9-11, 12-14, which were chosen because of their relation to the permanent tooth eruption pattern.

The indices used here to measure the extent of caries are (a) percentage of children having caries-free teeth, (b) tooth mortality rate (calculated only for all per-

manent teeth), and (c) mean DMF permanent teeth (for primary, mean df teeth). These indices are presented in turn for each type of tooth mentioned above.

In Brantford during the total study period the caries-prevalence trend has been dramatically downward in all age groups studied, with some variations in the downward rate. As a generalization it may be said that the data show that in the fluoride-free control city of Sarnia the caries prevalence has fluctuated but remained at a high level from survey to survey, while in the naturally fluoridated control city of Stratford it has fluctuated at a low level.

Percentage of Children Having Caries-Free Permanent Teeth

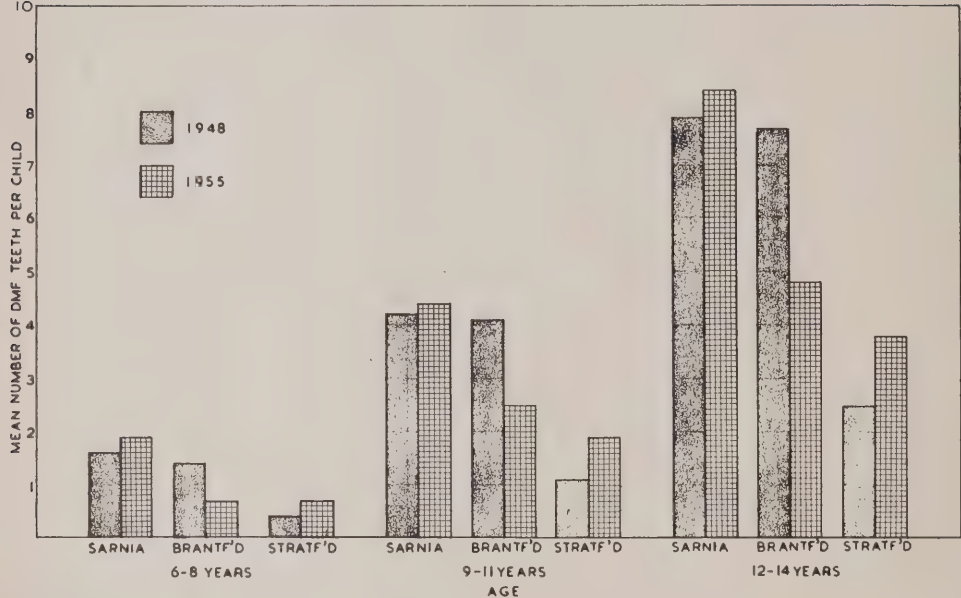
One measure of the effectiveness of fluoridation as a caries-preventive procedure may be obtained from examination of the numbers of children in Sarnia, Brantford and Stratford, having caries-free permanent teeth in 1948 and 1955. Table 2 and Fig. II summarize the findings in this regard, expressed as percentages.

TABLE 2
PERCENTAGE OF CHILDREN HAVING
CARIES-FREE PERMANENT TEETH
Percentage of Children Having Caries-Free
Permanent Teeth

Age Group	Year	Sarnia	Brantford	Stratford
6-8	1948	40.96	46.69	78.42
	1955	32.75	66.14	68.21
9-11	1948	6.13	5.71	52.08
	1955	4.19	25.48	32.99
12-14	1948	0.62	1.18	27.22
	1955	1.86	6.69	20.28

In 1948 the percentages of children in Brantford and Sarnia who were caries-free differed but little. In comparison with Stratford children, however, significantly lower percentages of caries-free children were found in Brantford, at all ages studied. This was to be expected; Stratford children had used fluoridated water continuously since birth, while even the youngest of the children in the Brantford study group were two and a half

FIG. 1
DMF PERMANENT TEETH PER CHILD
SARNIA, BRANTFORD & STRATFORD 1948-1955



years of age at the time fluoridation of that city's water supply was instituted.

By 1955 substantial increases had occurred in the percentages of caries-free children in Brantford at all ages studied. In both Sarnia and Stratford, on the other hand, the percentages of caries-free children in 1955 were somewhat below the 1948 levels. The Sarnia-Brantford differences in percentages of caries-free children had increased significantly in favour of Brantford children at all ages. No significant difference was found in 1955 between the percentages of caries-free children aged 6-8 years in Brantford and Stratford. In the two older age-groups, in 1955 there continued to be differences in favour of Stratford children, as could be expected. However, there were considerably smaller than in 1948, which was also to be expected.

Tooth Mortality

Tooth mortality among children in Sarnia, Brantford and Stratford, in 1948 and in 1955, is shown in Table 3. The findings are expressed in terms of the numbers, per 100 children of permanent teeth extracted and/or indicated for extraction. (A tooth which is too badly broken down and infected to be saved by ordinary treatment is classified, for the purposes of these surveys, as indicated for extraction.)

TABLE 3 MEAN TOOTH MORTALITY (MISSING AND IRREPARABLE) PERMANENT TEETH PER 100 CHILDREN				
Age Group	Year	Sarnia	Brantford	Stratford
6-8	1948	7.03	1.62	0.99
	1955	4.20	1.38	3.51
9-11	1948	51.31	28.91	5.09
	1955	41.54	8.24	8.66
12-14	1948	137.24	84.32	18.87
	1955	105.77	41.49	25.81

In 1948 tooth mortality among Brantford children was significantly lower than it was among Sarnia children, at all ages studied. No significant difference existed between tooth mortality of Brantford and Stratford children, aged 6-8 years; however, among Brantford children aged 9-11 years, and 12-14 years, tooth mortality was significantly higher than among Stratford children of the same ages.

There is a correlation between tooth mortality and caries prevalence in terms of the number of teeth attacked, unless the course of caries is halted by treatment.

In 1948, after three years' exposure to fluoridated water, the prevalence of dental caries among Brantford and Sarnia children was still of the same order. However, tooth mortality among Brantford children was considerably less than among Sarnia children. This could be accounted for by the fact that, in the former community, a much more favourable ratio existed between treated and untreated carious defects than was observed among Sarnia children. The prevalence of dental caries (Table 4) among Brantford children in 1948, was approximately four times greater than that of Stratford children; comparison of tooth mortality rates (Table 3) among Brantford and Stratford children showed Brantford children to have about four times the tooth-loss experienced by Stratford children.

dren, age for age. In Sarnia, no statistically significant changes had occurred in the tooth mortality of children aged 6-8 and 9-11 years, during the period 1948-55, while significant reduction was observed among children aged 12-14 years. During the same period, among Brantford children, a slight (non-significant) decrease took place in the 6-8 year group, and markedly significant decreases in tooth mortality had occurred in the two older age-groups, which were concomitant with the reduction in dental caries prevalence that occurred among Brantford children from 1948 to 1955. Comparison of tooth mortality among Brantford and Stratford children, in 1955, showed no significant differences among children aged 6-8 and 9-11 years; however, while the gap between tooth mortality of 12-14 year-old children had narrowed considerably, tooth-loss was still significantly greater among Brantford children in this age group.

Mean DMF Permanent Teeth

The dental caries experience of children in Sarnia, Brantford and Stratford in 1948 and 1955 is shown in Table 4, Fig. 1. The data are expressed in terms of the mean numbers of decayed, missing and filled permanent teeth per child.

Between 1948 and 1955, a marked and statistically significant reduction occurred in the prevalence of dental caries among Brantford children, at all ages under study. In Sarnia (the non-fluoride control city), however, the prevalence of dental caries in 1955 was slightly higher but on the same order as was found in 1948. Stratford children also exhibited slightly higher prevalence of dental caries in 1955, over the 1948 levels.

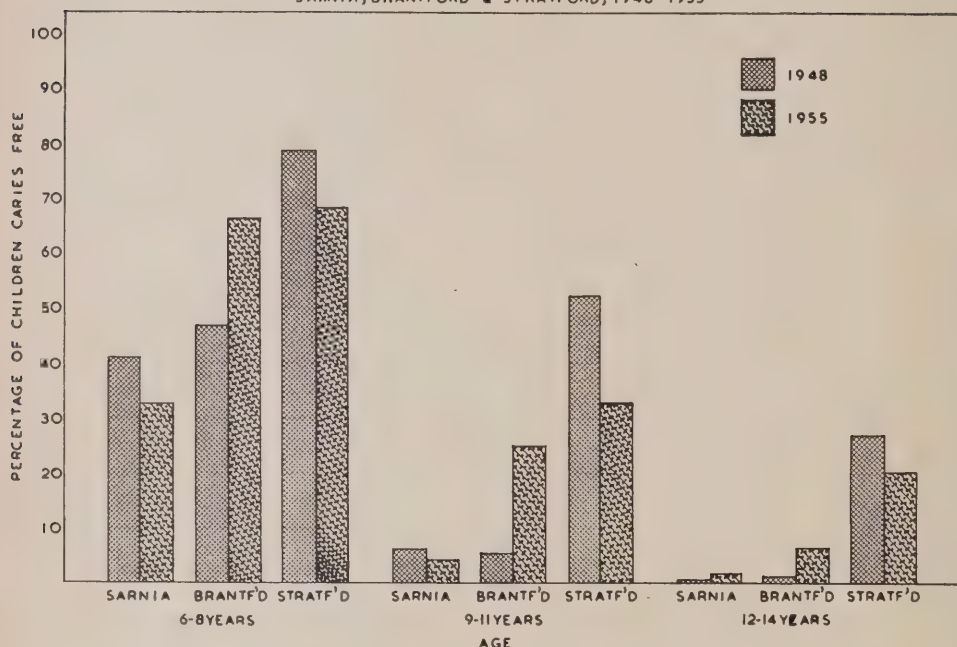
The Brantford-Sarnia differences in caries prevalence in 1948 were somewhat in favour of Brantford children, but were in the main, non-significant. By 1955 the differences had increased significantly in favour of the Brantford children at all ages studied. Between children aged 6-8 years in Brantford and Stratford, no sig-

TABLE 4
MEAN DMF (DECAYED, MISSING, FILLED)
PERMANENT TEETH PER CHILD
Mean DMF Permanent Teeth Per Child

Age Group	Year	Sarnia	Brantford	Stratford
6-8	1948	1.60	1.41	0.41
	1955	1.88	0.69	0.67
9-11	1948	4.21	4.07	1.13
	1955	4.44	2.28	1.89
12-14	1948	7.94	7.68	2.55
	1955	8.42	4.84	3.77

By 1955, tooth mortality rates among Brantford children continued to be significantly lower than those of Sarnia chil-

FIG. II
CHILDREN WITH CARIES-FREE PERMANENT TEETH
SARNIA, BRANTFORD & STRATFORD, 1948-1955



nificant differences in DMF rates were observed in 1955. In the case of children aged 9-11 years, and 12-14 years, the Brantford-Stratford differences in caries prevalence remained in favour of the Stratford children, as was the case in 1948. However, although these differences continued to be significant, they were considerably smaller than in 1948.

None of the Brantford children aged 12-14 years, and only relatively few aged 9-11 years, have undergone complete enamel formation and calcification subsequent to the introduction of fluoride to Brantford's water supply. Undoubtedly a large measure of the protective effect of fluoridated water in these children has been topical, up to the present. At the same time, as more and more Brantford children, born since 1945, enter the 9-11 year group, the caries prevalence findings tend

to decrease progressively toward levels observed among Stratford children of comparable age.

First Permanent Molars

The most caries-susceptible tooth of the permanent dentition is the first permanent molar; virtually all of the permanent tooth decay experienced by children aged 6-8 years, about three-quarters in the case of 9-11 year old children and from 50%-60% of that experienced by children aged 12-14 years, occurs in the first molar teeth. For this reason, the dental caries experience of these teeth is presented separately for 1948 and 1955, in Tables 5 and 6.

As might be expected the findings parallel those concerning over-all dental caries experience in the permanent dentition. Between 1948 and 1955, among

TABLE 5

PERCENTAGE OF CHILDREN HAVING
CARIES-FREE FIRST PERMANENT MOLARS
Percentage of Children Having Caries-Free First
Permanent Molars

Age Group	Year	Sarnia	Brantford	Stratford
6-8	1948	41.26	46.85	78.42
	1955	32.57	67.13	68.39
9-11	1948	6.65	6.22	52.31
	1955	3.49	26.25	33.61
12-14	1948	1.03	2.02	33.69
	1955	2.06	8.80	23.27

TABLE 6

MEAN DMF (DECAYED, MISSING, FILLED)
FIRST PERMANENT MOLARS PER CHILD
Mean DMF First Permanent Molars Per Child

Age Group	Year	Sarnia	Brantford	Stratford
6-8	1948	1.55	1.39	0.41
	1955	1.82	0.67	0.67
9-11	1948	3.15	3.26	1.07
	1955	3.35	2.04	1.70
12-14	1948	3.62	3.65	1.76
	1955	3.69	3.04	2.21

Brantford children, there was a marked reduction in the occurrence of caries in first permanent molar teeth, and a corresponding increase in the percentages of children having caries-free first permanent molars, at all ages studied. In the case of children in Sarnia and Stratford, however, the caries experience of first permanent molars in 1955 continued at, or above, the levels observed in 1948.

In 1948 the prevalence in DMF first permanent molar teeth was of the same order in both Brantford and Sarnia children; between Brantford and Stratford children there were observed statistically significant differences, in favour of Stratford children. In 1955, however, as has been the case since 1951, Brantford children were found to have significantly fewer DMF first permanent molars, at all ages studied, than Sarnia children. Between children aged 6-8 years in Brantford and Stratford, in 1955, no significant differences were observed in this respect. In the case of the two age groups of older children, there continued to be differences, in favour of Stratford children, despite a marked reduction in carious first permanent molars observed among Brantford children. It may be safely predicted that this difference will persist until children born in Brantford since fluoridation began, in 1945, constitute a full complement of the children in these two age groups.

Upper Permanent Incisors

The caries inhibiting effect of fluoridated water became apparent to a measurable degree in the upper permanent in-

cisor teeth in Brantford much earlier than in any of the other teeth, either permanent or deciduous. As early as January, 1948, i.e., about two and one-half years after fluoridation began there were significantly fewer carious upper incisors in the Brantford 9-11 year group than in the corresponding group in Sarnia. A small, non-significant lower prevalence was also shown by the 12-14 year group in that year. In all succeeding surveys, including that of 1955 a highly significant difference in favour of Brantford over Sarnia, was shown in both the 9-11 and 12-14 year age-groups. The increased caries resistance of the 12-14 year group from the 1948 to the 1955 survey can be accounted for almost entirely by the effect of the fluoride upon calcified enamel, either before or after eruption, or both, as at the time of the 1955 survey the greater part of the upper incisor enamel of this age group had been presumably calcified before fluoridation was begun in Brantford. These findings appear to confirm beyond any reason for doubt that water fluoridated to the extent of one part per million will inhibit significantly the caries attack rate in enamel already formed before fluoridation began. Presumably this is a topical effect. (See Table 7, and Table 8.)

A marked increase in caries in the upper incisors is shown by the data for both the older age groups in Stratford, and more particularly for the 12-14 year group. The caries lesions occurring in the incisor teeth of the Stratford children are for the most part of a pin-point size even

TABLE 7
PERCENTAGE OF CHILDREN HAVING
CARIES-FREE PERMANENT UPPER INCISORS
Percentage of Children Having Caries-Free
Permanent Upper Incisors

Age Group	Year	Sarnia	Brantford	Stratford
9-11	1948	76.53	82.86	97.07
	1955	70.68	91.57	95.05
12-14	1948	53.91	56.16	95.69
	1955	44.54	78.20	79.72

TABLE 8
MEAN DMF (DECAYED, MISSING, FILLED)
PERMANENT UPPER INCISORS PER CHILD
Mean DMF Permanent Upper Incisors Per Child

Age Group	Year	Sarnia	Brantford	Stratford
9-11	1948	0.56	0.34	0.01
	1955	0.65	0.13	0.07
12-14	1948	1.16	1.05	0.07
	1955	1.28	0.41	0.36

in the 12-14 year group. They are, on the average larger in the Brantford children and much larger in the Sarnia children. While it is probable that an upward fluctuation in the caries attack rate in terms of these small cavities may have occurred in Stratford by 1955, the possibility cannot be discounted that it may have been coupled with an increased intensity of examination, resulting in the scoring of a larger number of pint-point lesions. (The so-called 'precarious' classification of such lesions used in certain other studies was not adopted for these surveys.)

Deciduous Teeth

It is not possible to measure precisely the dental caries experience of deciduous teeth, because of the impossibility of determining at the time of examination whether a missing deciduous tooth was lost as a direct result of caries attack or because of natural exfoliation. Nevertheless, by measuring the observable caries experience in terms of decayed and filled deciduous teeth, a fairly reliable index of the deciduous tooth caries experience may be obtained. The findings concerning deciduous tooth caries experience of children aged 6-11 years in Sarnia, Brantford

TABLE 9
PERCENTAGE OF CHILDREN HAVING
CARIES-FREE DECIDUOUS TEETH
Percentage of Children Having Caries-Free
Deciduous Teeth

Age Group	Year	Sarnia	Brantford	Stratford
6-8	1948	10.16	12.28	35.65
	1955	8.58	23.82	30.87
9-11	1948	33.63	34.96	40.97
	1955	36.13	37.93	42.27

TABLE 10
MEAN DF (DECAYED, FILLED) DECIDUOUS
TEETH PER CHILD
Mean df Deciduous Teeth Per Child

Age Group	Year	Sarnia	Brantford	Stratford
6-8	1948	4.89	4.95	2.20
	1955	5.09	2.93	2.60
9-11	1948	2.50	2.37	1.66
	1955	2.31	1.99	1.65

and Stratford for the years 1948 and 1955 are presented in Table 9 and Table 10.

In 1948 no significant differences were found in the prevalence of deciduous tooth caries among children in Brantford and Sarnia. Stratford children, however, were found to have significantly fewer decayed and filled (df) deciduous teeth, at all ages, 6-11 years, than Brantford children. By 1955 Brantford children in both the age groups, 6-8 and 9-11 years, were found to have significantly fewer df deciduous teeth than Sarnia children; in comparison with Stratford children, no significant differences were found in children aged 6-8 years in Brantford. In the 9-11 year group, however, Brantford children continued to have significantly higher deciduous tooth caries experience.

The prevalence of deciduous tooth caries in both Sarnia and Stratford children, in 1955, remained relatively unchanged from 1948 levels. Brantford children in 1955, on the other hand were observed to have significantly fewer df deciduous teeth than had children of comparable age in that city, in 1948. Also, there was a significant increase in the percentage of Brantford children aged 6-8

years who were caries-free (deciduous dentition) in 1955, over the 1949 findings, in this regard.

Other Effects of Fluoridation— Mottling

All detectable enamel opacities and discolorations were recorded and classified as to degree of severity. Enamel opacities other than mottling are of fairly frequent occurrence in all communities whether or not fluoride is present in the water. It is very difficult if not impossible to distinguish clinically between certain of these opacities which occur in the absence of fluoride in the water and those which occur in the presence of water-borne fluoride, and are almost certainly fluorosis⁽⁵⁾.

A small percentage of the native children of Stratford have mild mottling of the enamel, which in no case is unsightly, and is detectable only by an experienced examiner. The Stratford water supply contains a concentration of fluoride which is sixty per cent higher than that used in Brantford and elsewhere for the prevention of tooth decay. A few cases of mild mottling barely detectable even on close examination were seen in Brantford. Enamel opacities resembling some of those seen in Brantford and Stratford were also observed in a small number of children in Sarnia. The observations made in both Brantford and Stratford provide ample proof that no significant mottling occurs with fluoride levels up to 1.6 parts per million.

Medical Effects of Water Fluoridation

After ten years' of experience with fluoridation in Brantford the Brant County Department of Health reports that no ill-effects have been detected there.

As a further check on the observations of this Department the Medical Officer of Health, Dr. W. L. Hutton, asked the practising physicians of Brantford whether they had observed any untoward effects

which might be attributable to fluoride. The following reply was received:

"At a recent meeting of the Medical Staff of the Brantford General Hospital, the members were asked if they had seen any untoward effects from the use of fluoridated water in this vicinity, with the result that no such observations had been made by any practitioner to the best of our knowledge."

Just prior to the publication of this report all of the physicians of Stratford were asked individually whether or not any of them had observed any ill-effects from the fluoride content of the water supply there (1.6 ppm.), which has been in continuous use for thirty-eight years. All replied that they had not observed any ill-effects.

Comments

The reduction in the amount of tooth substance destroyed by decay, as a result of fluoridation, is even more impressive on clinical examination than the decrease in the number of teeth attacked. There is, unfortunately, no method of measuring accurately the volume of tooth structure damaged by the decay process. If this were possible there appears to be little doubt that fluoridation would be found to prevent and inhibit tooth decay to the extent of somewhere in the range of 75 per cent to 80 per cent. If coupled with the practice of brushing the teeth or rinsing the mouth just after eating and avoiding sticky sweet snacks between meals and before going to bed, it is probable that tooth decay and gum disease could be almost entirely prevented.

As matters now stand, either tooth decay or gum disease (pyorrhea), or both, attack nearly every Canadian at some time during his life. Over 98 per cent of school-age children brought up in communities where there is no fluoride in the water experience tooth decay, which if not treated leads inevitably to abscesses of the jaws, and loss of one or more teeth. From the age of 30 years upwards

the almost entirely preventable diseases of the gums attack most Canadians, and from that point on are responsible for as much infection of the mouth as tooth decay. An important factor contributing to gum disease is the early loss or mutilation of the dentition by decay. The care of oral diseases and disabilities has become a very costly item on the health budget of the average Canadian ⁽⁵⁾. Canada employs one dentist to every three physicians, and needs one dentist to every two physicians, as in the United States, in order to meet present treatment demands. This situation has arisen not only through the increasing incidence of decay and periodontal disease, but also through the lack of preventive measures suitable for mass use. Fluoridation comes as a much needed and important partial answer. It brings the prevalence of tooth decay down to a point where it can be economically controlled by treatment, and practically eliminated among those who practice good eating habits and good oral hygiene.

SUMMARY

Brantford has had more than 10 years of experience with 1 part per million of fluoride in its water supply. During that time a very important, statistically significant reduction in tooth decay has occurred in all the age groups studied, while in the two control cities of Sarnia and Stratford it has either remained at about the same level or increased somewhat.

The children born in Brantford since fluoridation began now exhibit the same degree of resistance to dental caries as those of the corresponding age group in Stratford, where water containing about 60 per cent more fluoride than the water used at Brantford, has been consumed during the past thirty-eight years.

No ill-effects of either a medical or a dental nature have been revealed by our study, or reported by the medical profession, by the dental profession, or by the health authorities in either Brantford or Stratford. These findings and corroborating evidence from other contemporary

studies ^(6, 7, 8) have provided the basis for recent official recommendations by the Canadian Dental Association ⁽⁹⁾, the Canadian Medical Association ⁽¹⁰⁾, and the Canadian Public Health Association ⁽¹¹⁾ that the fluoride concentration of all fluoride-deficient water supplies be raised to 1 part per million by the mechanical addition of fluoride.

A fact of fundamental importance in public health has been established. Raising the fluoride content of a fluoride-deficient water supply to about 1 part per million will lower the attack rate of tooth decay among children born subsequent to fluoridation, to about one-third of that which prevails among those born and continuing to reside in communities which have no fluoride in their water supply, such as Sarnia. For every three decayed teeth they would have had, they have only one.

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* (Reports covering all the caries data for all the surveys carried out since the inception of this study are available from the Dental Health Division of the Department of National Health and Welfare, on request.)

Avoiding complications in oral surgery*

by JAMES R. HAYWARD, D.D.S., M.S.**

Our profession has emerged from an era of empirical methods and following vain hopes for an expedient panacea. The problems in oral surgery, like any other phase of patient care, are common to all operators. There are no special instruments, drugs, or techniques which will prevent complications in surgery. The need for surgical intervention may lead to successful and appreciated health service, or to mutilation, accident and morbid complications. The significance of the latter can be appreciated if we realize that a mistreated patient reflects unfavorably not only upon the individual operator, but upon the entire profession. It is well then for us to analyze the pitfalls in oral surgery and the habits of practice which may prevent complications.

The complications which we would like to avoid are: 1) Hazards to the safety of the patient. 2) Technical blunders. 3) Invasion of adjacent vulnerable zones of anatomy. 4) Infections. 5) Stormy recovery periods. If we analyze these problems we find that most of them are the result of omissions and errors seen as short-cuts in technique and disregard for surgical principles. In pre-operative management they are omissions and errors in diagnosis, in patient evaluation, and in treatment planning. In the operating phases they arise from an expedient disregard for surgical principles from uncontrolled forces and from careless handling of tissue. In the postoperative period they arise from neglect in supervision and lack of proper direction of the patient.

The prevention of these major sources of trouble may be achieved within practical limits by fundamentals of: 1) A constant awareness of the essentials of diagnosis. 2) An effective treatment plan re-

specting principles of surgery. 3) Diligent postoperative management.

Knowing that principles are always easy to expound and to fight for, but very difficult to live by, let us look to the routine habits of practice which help us to include these essentials for the prevention of complications.

Successful surgery is not expedient. It follows a pattern, through preoperative management, operative procedure, and postoperative supervision. The habit of a brief, careful evaluation of our patient will apprehend obvious hazards to surgery and will contribute to our diagnosis. The diagnosis can never be an arbitrary spilt second judgment. It is the end product of interchange of facts and impressions from the three sources: 1) History. 2) Examination. 3) Laboratory aids, which include x-rays. Without the balancing interchange from these three sources, we may be sadly misled by a single symptom, clinical impression, or x-ray.

Of the three sources of facts, history is the most neglected in office practice, and yet it is the most valuable safeguard we have. Through years of service, you know all about the past histories of some of your patients presenting for surgery, but it is often a condition needing surgery that brings the new patient in for his first visit. To start anesthesia and surgery on a patient without checking on his physiologic reserve and surgical record is an unjustified risk. A history puts the patient's complaint into its proper perspective and is essential for our goal of accurate diagnosis. In office work it is only practical to abbreviate the medical history to just a few screening questions or to a printed questionnaire. This habit of taking a short history requires only a few seconds of casual questioning, and yet these seconds may be the most important seconds of the entire day. Discoveries of underlying systemic disease,

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allergies, or prolonged bleeding indicate the need for further investigation. Thus the habit of a history precludes many pitfalls to elective oral surgery.

Our next step is to examine our problem. A thorough examination of the oral cavity constitutes one of our first responsibilities in the maintenance of oral health. We must keep in mind that this includes all hard and soft tissues extending from the lips to the pharynx. In the past the dentist looked at teeth, the physician looked at the throat, and the balance of the oral cavity was "in no man's land". It is unfortunate, but a natural tendency, for dentists to become channelled into concentration on individual tooth restorations and to overlook the rest of the mouth. Such neglect reflects unfavorably upon the individual practitioner and the entire profession. The following is a flagrant example of concentration on teeth and the omission of soft tissue examination. A patient consulted his dentist for relief of a toothache and two upper molars were extracted. When the pain persisted, due to a dry socket complication, patient went to two other dental offices and in one of these offices an opposing lower molar was removed. At no time was there any mention of a large squamous cell carcinoma, virtually in contact with the teeth removed. An extreme case, certainly hard to believe, yet many less obvious but equally significant lesions are missed every day. Just recall your patients of today. Are you sure that all the recesses of their mouths were carefully examined? Probably not in every case, but the habit of making a careful examination of all the hard and soft tissues of the mouth should be cultivated. It takes just a few seconds to inspect the lips, buccal mucosa, palate, tongue, floor of the mouth and pharynx. We may discover conditions here far more important to the patient than the trouble that brought him to our office. An example of this was seen in a patient who presented with a toothache, but upon examination was found to have a lip lesion which resembled a com-

mon herpetic lesion. Upon questioning it was found to have been present for six weeks. Following the maxim that any lesion which fails to heal in two weeks suggests neoplasm, the lesion was biopsied and found to be a squamous cell carcinoma; unusual in that it occurred in the upper lip of a nineteen year old boy, and 95% of lip cancer is on the lower lip of older men. One of the best habits we can form is to get a pathologic diagnosis through biopsy, wherever we believe that tissue does not look right. Biopsy prevents errors of too rapid treatment with misleading clinical diagnosis. The ventral surface of the tongue and the floor of the mouth are often missed, and may be the site of significant lesions such as carcinoma. Careful examination of the oral cavity may reveal lesions of importance to the dentist as well as to the patient such as the chancre, or primary lesion of syphilis. If we will make it a reflex habit to inspect the oral cavity routinely at the beginning of each appointment, we will perform our duty as a guardian of oral health.

Certainly the essential habit of preoperative x-ray needs no emphasis. When you realize that surgical intervention to remove a tooth makes us responsible for all related bone pathology in the area, there can be no short cuts of neglecting x-rays. Knowing that loose teeth can be the result of bone malignancy or fractured jaws as well as periodontoclasia, we can't feel safe without a preoperative x-ray of even a loose tooth. If cancer becomes evident in an extraction area, there is always dental responsibility in the mind of the patient. We need only consider the x-ray disclosures of bone pathology in forms of cysts, neoplasms, and odontogenic infection added to the structural relationships of roots and surrounding bone to be reminded of our dependence upon clear radiographic diagnosis. X-rays are laboratory facts that are worthless without our judgment and interpretation. It is the interchange of facts with judgment and preoperative evaluation that

prevents errors from one source. For example, the operator who found himself frustrated after an hour's digging for a root which he was convinced through x-ray examination was located in the mandibular canal. Had he recalled the anatomy of this region he would have remembered that the roots of the second and third molars do not lie over the canal, but are over the submaxillary space. When they fracture, these roots may easily be pushed down into the space by slight elevator pressure. By getting out of the socket and by carefully incising the mylohyoid muscle attachment on the lingual, these root tips can be manipulated upward for rapid removal. The habit of interchanging facts and judgment leads to efficient operating. It was Halstead who said, "It is the poor surgeon who works only with his hands". Skillful techniques alone will not avoid complications. The closer we get to vulnerable areas of anatomy, such as the maxillary sinus, infratemporal fossa, submaxillary fossa and inferior alveolar canal the more judicious we become. Greater care and delicate instrumentation become essential. Blind force and expediency will promote the pitfalls of these zones.

Treatment plans in oral surgery are modified when obvious risks show up in preoperative evaluation. An upper respiratory infection may be the forerunning symptom of a serious disease. Acute infective stomatitis also contraindicates surgery. Knowing that our concern is with both the success of the surgery and the safety of the patient, no elective surgery is done in the face of acute infection. The underlying chronic systemic diseases of significance to us can be segregated into cardiac, pulmonary and renal disease as well as hypertension, diabetes and blood dyscrasias; all conditions calling for close co-operation with our medical colleagues.

Most apprehensive cardiacs will volunteer their status quickly, and for our purposes we can divide heart disease problems into two age groups, the rela-

tively young and the elderly. The first are the rheumatic fever damaged, the congenital endocardial and valvular defects. The problem here is prevention of a bacteremia, which might produce endocarditis complications following extractions. We rely on generous prophylactic use of antibiotics for protective blood levels during and following surgery. In the older, or arterial sclerotic hypertensive group, we want to avoid further strain on coronary circulation by stress situations. These patients need barbiturate premedication, short easy procedures, and a reduction in the concentration of vasoconstrictor agent used in the anesthesia.

Diabetics involve the risk of high susceptibility to infection and dangers of diabetic coma in the uncontrolled and usually undiagnosed case. It should be kept in mind that the epinephrine used as a vasoconstrictor with local anesthetics may produce a hyperglycemia in the diabetic patient. We co-operate with the internist in selecting the best time for elective surgery and rely on antibiotics for assistance against infections.

Blood dyscrasias bring direct problems to us with prolonged bleeding, disturbed physiology of anemias and the depressing prognosis of leukemia. Any gingivitis that fails to respond well to local treatment indicates immediate blood studies, for it may be a leukemic manifestation. Implications of anemia to anesthesia and blood loss need no repetition here, but must be given full consideration in treatment planning. The story is frequently heard that a patient bleeds excessively after extraction. By opening up vascular beds in bone and soft tissue, hemostasis in the socket becomes a complex mechanism. The great majority of prolonged bleeding in these patients has come from excessive trauma, infection, or hypertension which impede initial coagulation or maintenance of the clot in the socket. The true bleeding tendency is rare, but it can and should be identified by careful history and blood studies. Shotgun and

empirical medication with vitamin K or calcium are irrational and not without danger for they may have nothing to do with the bleeding tendency. The diagnosis of defective clotting is a laboratory procedure and tests of bleeding time, clotting time, and other studies will screen doubtful patients before surgery. None will ever thank us for undertaking some of these risks in the office. Any severe bleeding tendency requires hospital management. Habits of blood studies in doubtful cases will lead to safe operating.

When our patient is cleared for surgery through possibly a very brief or quite detailed evaluation, the exact treatment plan is outlined. Preparation for some of our work often should be both therapeutic and mental. People always fear what they do not understand and if we reassuringly explain to the patient what must be done, we promote co-operation and appreciation of the service we render. The appalling ignorance of laymen manifest in the success of charlatans should prompt us at least to educate our patients briefly to the requirements and benefits of our service. Good psychology often does more than drugs, and its importance in our field is becoming recognized.

Premedication with rapid acting barbiturates to reduce apprehension is a beneficial and well established practice. Helpful sedation with 50 to 100 milligrams of demerol and similar analgesic drugs will also add to the comfort of the patient. Use of drugs should be as specific and rational as possible, individualized to the patient's requirements and not given in haphazard routine dosage. With wise premedication the patient is prepared for anesthetic and operation.

The technique of oral surgery starts with a paradox. We attempt asepsis in a field harboring abundant bacteria. Through the years the importance of instrument sterilization, prevention of cross contamination, and delaying surgery for acute infectious stomatitis has become respected. Another way to prevent infection is by careful preparation of the field be-

fore injections and incisions are made. The mucosa is wiped dry and topical germicides applied. Some will contend that these organisms are of the patient's own flora and that the tissues are immune to possible ill effects from these bacteria. True enough, resistance of the surface tissues is amazing, but when the same organisms are carried into deep tissue it is a different situation. We long have emphasized a dry field for injection. Infection depends on many things: the number of organisms, the virulence, the defense of local tissue resistance, antibodies and others. It has been shown that if two identical experimental animals are inoculated with the same number of identical organisms, but just a trace of mucin is added to one of the bacterial injections, the combination of bacteria and mucin will produce infection, whereas none will develop in the plain bacterial injection. Thus it can be seen that the combination of mucin from salivary secretion with orobacteria may promote the establishment of deep infections. It is a good habit then to keep the injection field dry and to keep saliva out of the blood as it forms a clot in the socket.

The choice of anesthetic depends on the patient and the surgery required, using the criteria of: the safety of the patient, the success of the surgery, and the comfort of the patient, in that order of importance. Suffice it to say that no single anesthetic is best for all patients and that any anesthetic must be well controlled and profound if complications are to be avoided.

Looking to the fundamentals of instrumentation, most complications are the result of two errors: blind manipulation and excessive uncontrolled force. Efficient operating is impossible without good vision. We need: access, suction, hemostasis, and good light. When it becomes evident in the course of an extraction that bone relief to sectioning or root tip recovery are necessary, it is time to pause, look things over, and plan an adequate flap for good access. All of this

before the surrounding soft tissues become macerated and lacerated by blind instrumentation in expedient efforts. The habit should be developed of following the principles of good flap design by keeping the margins outside the areas of bone removal and preserving a wide base for adequate blood supply.

When teeth resist forceps extraction, it is certainly no time to spread the stance and lean on them. All, no doubt, have often regretted that extra pressure that leads to fractured roots or fractured processes. Uncontrolled force will make any residual upper molar or cuspid a potential complication. Resistant multi-rooted teeth can be sectioned so that they require no great force for removal. Habits of good vision and controlled force will mean careful and efficient surgery. When the difficult tooth finally has been removed, it is not the time to relax our attention to the patient. The rapidity of healing and the patient's comfort depend upon the care with which tissues are handled and the adequate closure of the operative site. A careful examination of the field of operation should reveal any residual fragments of tooth or chips of bone. It is often said that what is left behind leads to complications. Granulation tissue is a phase of healing, but in periapical lesions it should be eliminated. These areas of granulation tissue contain epithelium with cystic potential and for this same reason the reduced enamel epithelium around the crowns of unerupted teeth should also be thoroughly removed to avoid the possible complications of residual cysts. A study of this reduced enamel epithelium at the University of Michigan's Dental School carried out in co-operation with the Department of Oral Pathology showed 10 per cent of the 200 specimens examined contained ameloblastic tissue.

Before closure, the contour of the alveolar process is adjusted and irregularities are reduced to simplify healing and create a better prosthetic foundation. If bone is carefully removed with sharp instru-

ments, it matters little whether a chisel, impactor, rongeur, file or bone drill are used. Sharp instruments, fully controlled, effect conservative and effective bone removal. The soft tissue flap excesses are trimmed for it is always easier for the healing process to make up any slight deficiencies in soft tissue than it is to submit the patient to a secondary procedure for the removal of excess tissue. The flaps are not closed under tension, however, and the interdental papillae may be interdigitated when useful; however, it is not necessary to get complete closure. If the habit of proper flap design has been developed, the margins will be supported by a sound table of bone and will not fall into ridge defects. Initial sutures over the crests of interradicular bone eliminate irregularities and help to even the contour of the ridge.

The topical use of sulfonamides and antibiotics has been a popular ritual. With the widening sources of antibiotics and the availability of the antihistamine drugs, the dangers of sensitization and reactions, although still present, are not as serious a problem as they formerly were. The fine powdered and highly purified forms will not interfere with healing if used in small quantities and incorporated into the blood of the clot. Use of large quantities of powder, pastes, or insoluble products is contraindicated, for they will only act as a foreign body in the socket.

Where there are large defects of bone that there will not be primary organization of the entire clot, we may elect to place a dressing or one of the foam products in the central dead space. Of the foam products, oxidized cellulose in the form of Oxycel or Hemopack, although a fine hemostatic, is contraindicated in bone cavities since it delays bone repair. Fibrinfoam is impractical due to its extreme friability, making it difficult to handle, and its high cost. Gelfoam appears to be the most suitable material, but has its limitations. In bone cavities open to the mouth, the gelatin sponge may break down and be lost from the cavity within

a few days. When it has been used in cavities which can be completely closed this difficulty has not arisen. More recently, decorticated bone chips have been found to be very suitable for filling large bony defects. The benefits of a central absorbable scaffold material in large defects leads to shorter recovery periods with simplified healing. Dressings are a very controversial phase of postoperative treatment. Some men dress every extraction site, and others rarely dress any of their extraction sites. A dressing accomplishes three things: it eliminates dead spaces, promotes drainage and can be used to carry drugs to the site of healing. The decision to use a dressing should take into account the size of the defect, the condition of the tissues, and the healing potential of the patient. We must keep in mind the fact that although a dressing may make the patient more comfortable, it is a foreign material and will delay healing, thus their use should cease as soon as the time necessary to control pain or promote drainage is complete.

Just as the preoperative mental preparation of the patient can be helpful, so an understanding of the postoperative course and definite instructions will prevent complications. Habits of giving both verbal and printed instructions will prevent the peculiar and amazing ways that patients find to get into trouble. Without precautions they will wash blood clots from the sockets, use local irritants, and get hysterical over trivial symptoms. By knowing what to expect, and following suggestions to minimize pain, swelling, and bleeding, such unnecessary anxiety is avoided. With gauze sponges an effort is

made to keep saliva out of the clotting area and after complete hemostasis and inspection, the patient is dismissed with a firm gauze compress over the site and instructions to maintain pressure on it for 20 minutes before discarding it. This procedure will help to prevent bleeding under the flaps and tend to minimize initial traumatic edema in the area of operation.

We may summarize by restating the good habits which will do much to aid in avoiding complications in routine oral surgery. 1) Take a good history. 2) Do a thorough examination of all oral tissues, hard and soft. 3) Have adequate x-rays for the procedure to be undertaken. 4) Have other necessary laboratory studies done as indicated by the history. 5) Use good judgment in interpreting the information obtained through the history, exam, x-ray and laboratory studies, and in this way prepare a treatment plan. 6) Prepare the patient for the procedure by explaining to him what is necessary and what will be done and what he may expect as a postoperative course. 7) Select the proper premedication for the patient if it is necessary. 8) Select the proper anesthetic for the patient. 9) Be sure that you have good vision of the operating field at all times. 10) Use controlled force. Do not hesitate to section a tooth or relieve bone if it cannot be simply removed. 11) Be sure of proper closure. This means inspecting the area of operation for fragments of tooth or bone, trimming of excess tissue, and adequate suturing. 12) Give the patient both verbal and written instructions as to the proper postoperative care, and follow the clinical course closely in difficult cases.

Expanded scientific research is urgently needed to help reduce the enormous amount of ill health and disability caused by dental disease.

The Association acknowledges that some priority might properly be given to problems that are related to a high death rate but it does not believe that such priority should be perpetuated at the cost of problems which, while less dramatic, take a relentless toll of human health and well-being.

Dr. Harold Hillenbrand, Secretary A.D.A.
Before House Sub-committee on Health,
Education and Welfare, March 1956.

Salivary calculus in Wharton's Duct

by R. W. MARSHALL, D.D.S., Toronto

A Case Report

With the exception of epidemic parotitis (mumps), perhaps the most common condition affecting the salivary glands is that of salivary calculus. ⁽¹⁾ Harris ⁽²⁾ reported salivary stones affecting the salivary glands and their ducts in the following order of frequency:

1. Wharton's duct from the submandibular gland, 61.4%
2. Stenson's duct from the parotid gland, 20.4%
3. Sublingual gland and ducts, 18.2%

Harrison ⁽³⁾ in 1926, made survey of all reported cases dating back to 1825 — a total of 375. His figures, in relation to occurrence coincide closely with those of Harris. Ivy and Curtis ⁽⁴⁾, ⁽⁵⁾ reported on a total of 115 cases of salivary calculus, of which 106 were connected with the submandibular gland or duct or both, and 9 of which involved the parotid gland and duct.

Blair and Ivy ⁽⁶⁾ found that submandibular calculus occurs in males and females in the approximate ration of 2:1. In a recent series of 40 cases, there were single calculi in 27 of these, and more than one in 13.

There are three commonly accepted theories of the etiology of salivary calculus.

1. The foreign body theory was advanced by Mareau in 1876 and again by Czrgan in 1890. A foreign body such as oral calculus may find its way into one of the ducts and act as a nucleus around which calcific salts from the saliva are deposited.

2. The inflammatory theory was proposed by Immusch in 1861. A chronic in-

flammation of the duct causing a slowing of the salivary flow may predispose to the precipitation of the calcium salts from the saliva within the lumen of the duct.

3. The parasitic theory was first suggested by Maas in 1871. Kleks in 1876 advanced the idea that the calcular deposits were caused by calcium precipitating organisms.

An analysis by Prouzerque gives the composition of salivary calculus as follows: Calcium Phosphate 60-65%, Organic matter 25%, Calcium Carbonate about 6%, and traces of iron and magnesium.

The inflammatory obstruction of Wharton's duct by calculus presents little difficulty in diagnosis. There is an acute or subacute swelling in the submandibular region of the floor of the mouth, well circumscribed and tender to pressure. There may be sharp pain in the floor of the mouth, radiating along the side of the tongue, more severe during mastication and deglutition. The pain is usually accentuated by the sight, thought or memory of food which causes an increase in salivary flow and a subsequent increase in pressure within the gland. The radiograph is of utmost value in confirming the diagnosis as the calculi are rich in mineral salts, thus absorbing sufficient of the rays to produce a marked radiopacity on the film.

CASE REPORT:

History: A man, age thirty-seven, was referred to this office in December 1953, with a fairly severe swelling in the floor of the mouth on the right side. He reported that his first and only trouble in this area had occurred about three weeks pre-

viously, at which time he became aware of a slight swelling which had become progressively worse. He was experiencing typical salivary colic (1) which is a sharp pain in the floor of the mouth radiating along the side of the tongue, being more severe during mastication and deglutition.

Examination: The patient's temperature, orally, was 100.5 deg. Fahrenheit. Intra-orally there was some swelling along the right floor of the mouth and the mucous membrane was inflamed. On palpation, a hard mass could be distinguished in the region of the submandibular duct. Radiographs, figures I and II made at that time indicated the presence of calculus.

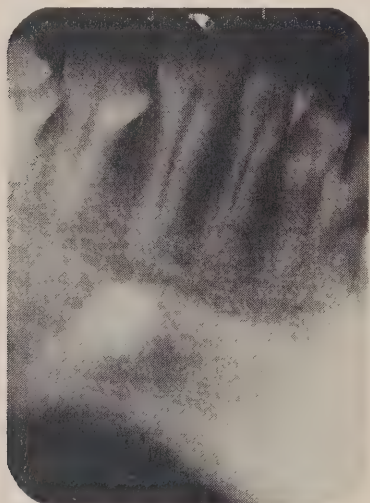


FIGURE I

Periapical film showing the calculus.

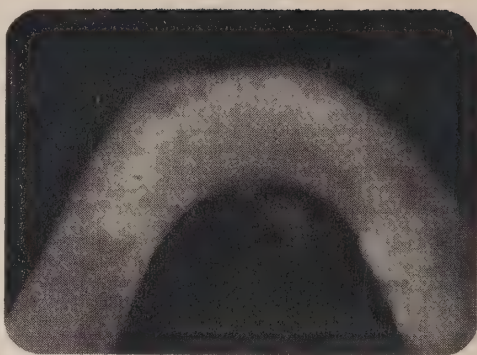


FIGURE II

Occlusal plane film showing the calculus.



FIGURE III

Calculus.

Operative Procedure: The patient was premedicated by administering two grains of sodium secenal orally. The lingual nerve on the right side was blocked with procaine and several drops of the anaesthetic solution were injected into the mucous membrane of the floor of the mouth at the mid-line to block anastomos-

ing branches of the lingual nerve from the left side. A suture was placed through the tissue posterior to the calcular mass and tied around the first molar to help stabilize the area to be opened. The mucous membrane was incised parallel to the duct, over the anterior portion of the calculus as this part appeared larger than the posterior part in the radiographs. When the stone was uncovered, it was grasped with tissue pliers and removed from the duct.

Result: Relief was experienced by the patient instantaneously, and by the third day postoperatively, pain and swell-

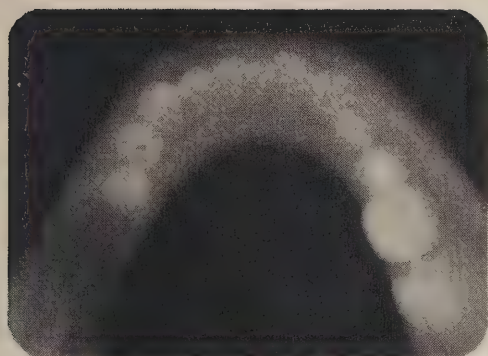


FIGURE IV
*Postoperative film.
Taken about two years later.*

ing had practically disappeared. Figure IV is a radiograph made about two years postoperatively, in which the floor of the mouth has a normal appearance.

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74 St. Clair Ave., W.

The Annual Convention of THE MARITIME DENTAL ASSOCIATIONS

in conjunction with

THE DALHOUSIE REFRESHER COURSE

JUNE 27, 28 & 29, 1956

Halifax, N.S.



LECTURERS

DR. DREXELL BOYD

Professor of Operative Dentistry, University of Indiana

DR. DONALD S. MOORE

Assoc. Professor of Dentistry, Toronto University

DR. CLYDE H. SCHUYLER, F.A.C.D.

New York, N.Y.

ABSTRACTS

THE ABSTRACTS OF STUDIES XIII and XIV from Newburgh-Kingston are included in order that comparison may be made with the Brantford-Sarnia-Stratford project as both areas have now concluded 10 years of fluoride experience. Ed.

Newburgh-Kingston Caries-Fluorine Study XIII. Pediatric Findings after Ten Years.

by EDWARD R. SCHLESINGER, M.D., M.P.H., Albany, N.Y., DAVID E. OVERTON, M.D., M.P.H., Riverhead, L.I., N.Y., HELEN C. CHASE, M.Sc., and KATHERINE T. CANTWELL, B.A., Albany, N.Y.

The Journal of the American Dental Association, March 1956.

This report on the findings on the general medical and related examinations during the ten years of the Newburgh-Kingston Caries-Fluorine Study emphasizes the examinations performed ten years after the start of fluoridation of the water supply of Newburgh. At the time the study was proposed, all the scientific evidence available pointed to the safety of drinking water containing about 1.0 ppm of fluoride at the source. There was no reason to believe that fluoride, when added to the drinking water as part of the water treatment process to make up for a deficiency of fluoride, would act in any way differently from fluoride already present. Nevertheless, it was considered desirable to test this remote possibility under the carefully controlled conditions established for the Newburgh-Kingston study.

Closely similar groups of children were studied in Newburgh and Kingston. Excluding those children who dropped out for any reason during the course of the study, 500 of the children enrolled in the study in Newburgh and 405 in Kingston were seen in the final series of examinations. The children in Kingston, where the

drinking water supply has been essentially fluoride-free, served as controls for the Newburgh children who drank water fluoridated at a level of 1.2 ppm. No differences of medical significance could be found between the two groups of children; thus further evidence was added to that already available on the safety of water fluoridation.

The examinations performed in the tenth year of the study may be summarized briefly. Each child was given a general medical examination by a qualified pediatrician. Height and weight were measured. Roentgenograms were taken of the right hand, both knees and the lumbar spine, and the bone density and bone age (maturation of the skeleton) were estimated. Laboratory examinations, including hemoglobin level, total leukocyte count and routine urine analysis, were also made. In addition, special studies were performed on smaller groups of children. These studies included detailed examinations of the eyes and ears, with determination of visual acuity, visual fields and hearing levels, and studies of the quantitative excretion of albumin, red blood cells, and casts in the urine.

Newburgh-Kingston Caries-Fluorine Study XIV. Combined Clinical and Roentgenographic Dental Findings after Ten Years of Fluoride Experience.

by DAVID B. AST, D.D.S., M.P.H., DAVID J. SMITH, D.D.S., BARNET WACHS, D.D.S., and KATHERINE T. CANTWELL, Albany, N.Y.

The Journal of the American Dental Association, March 1956.

The results of dental clinical and roentgenographic examinations of children in Newburgh and Kingston after ten years of fluoride experience in Newburgh have been reported.

The children ages six to nine in Newburgh who had been drinking fluoridated water all of their lives had a DMF rate for permanent teeth 58 per cent lower than in Kingston children of the same age.

The 10 to 12, 13 to 14 and 16 year old Newburgh children, who were not exposed to fluoridated water all of their lives but who had had continuous residence in Newburgh since May 2, 1945, had rates lower by 52 per cent, 48 per cent and 41 per cent respectively, compared with Kingston children of similar ages.

With regard to first permanent molars, the children who lived all their lives on fluoridated water had a DMF rate 53 per cent lower than the Kingston children of the same age. These Kingston children had three times as many first molars with untreated caries and about eight times as many first molars already lost because of caries than noted among the Newburgh children.

DMF rates for first molars among Newburgh children who did not have lifetime exposure to the fluoridated water compared with similar aged Kingston children were lower by 30 per cent in the 10 to 12 year old group, 14 per cent in 13 and 14 year olds and 4 per cent in those aged 16. The 10 to 12 year old children in Kingston had an 80 per cent higher untreated caries rate than

Newburgh children, at ages 13 and 14 Kingston's rate was more than 33 per cent higher and at age 16 about 70 per cent higher. With regard to missing first molars, the Kingston children had more than 4½ times the Newburgh missing first molar rate at ages 10 to 12, about 70 per cent higher rate at ages 13 and 14 and 48 per cent higher at age 16.

The DMF rate for second permanent molars in Newburgh children aged 13 was 51 per cent lower than that for the Kingston children. At age 14, the Newburgh rate was 44 per cent lower and at age 16 it was 29 per cent lower.

The data based on DMF surfaces indicate that ingested waterborne fluorides at the optimum concentration affords selective protection for the proximal surfaces of posterior teeth in comparison with occlusal surfaces.

There were about six times as many children in Newburgh ages six to nine who had all their deciduous cuspids and deciduous molars present and caries free than noted in Kingston.

In a study of enamel opacities among children ages 7 to 14 in Newburgh and in Kingston, there was no evidence of any disfiguring mottled enamel among the Newburgh children. Forty-six Newburgh children had questionable fluorosis, 26 had very mild fluorosis and six had mild fluorosis. There were 115 children in Kingston who showed non-fluoride enamel opacities and 36 such children in Newburgh.

There was no evidence that drinking fluoridated water at the recommended concentration contributed to the hazard of gingivitis.

Reparative Dentine Following Cavity Preparation and Fillings in the Rat Molar

by STANLEY R. WEIDER, D.D.S., ISAAC SCHOUR, D.D.S., Ph.D., and
CLIVE I. MOHAMMED, L.D.S., M.S., Chicago, Ill.

Oral Surgery, Oral Medicine and Oral Pathology, February 1956.

This study was based on histologic sections of forty-seven maxillary first molars of young adult white rats in which cavities had been prepared to different depths and left open or filled with zinc oxide and eugenol or with aquadent (zinc oxide, 1200 parts, zinc sulphate 100 parts, and cornstarch 100 parts, which set when mixed with water). The animals were sacrificed two and three weeks after the operative procedure.

Reparative dentine was formed under the cavities in all instances. Each specimen was analyzed in terms of the amount and structural characteristics of the reparative dentine. The depth of the cavity was found to be more significant in determining the amount of reparative dentine than were the different fillings or the exposure to oral fluids. The quantity of reparative dentine increased and its structure became more irregular as the cavity depth increased. The structure of the dentine also showed increased dis-

turbance with the increased rate of its formation.

When cavities of similar depths were compared, the reparative dentine showed the least structural disturbance under zinc oxide and eugenol and the most under the open cavities. Both the open cavities and those filled with zinc oxide and eugenol showed a temporary retarding effect on the deposition of reparative dentine in the specimens of two-week survival. However, the amount of reparative dentine was greatly increased at the end of the third week.

The findings thus reveal that the response of reparative dentine formation could be evaluated in terms of depth, age, and filling gradients.

The molar of the rat is a useful test object for experimental studies on the effects of operative procedures and filling materials on the formation of reparative dentine.

Periodontal Principles of Restorative Dentistry.

by JULIUS N. OBIN, D.D.S.

The New York State Dental Journal, February 1956

The fields of periodontology and restorative dentistry are to a great extent interdependent. In many cases, restorative procedures to maintain and encourage the health of the periodontal structures are an important part of periodontal therapy.

With adulthood, more teeth are lost due to periodontal disease than to caries. The development of caries control programs should increase this percentage. The proper rehabilitation of the mouth at any age through the adherence to sound techniques and principles will tend

to enhance and prolong effective alveolar support and will promote good oral health.

No restoration of any kind can be effective and durable if the foundation upon which it is built is not sound. Conversely, no restoration, no matter how well executed technically, will benefit the patient if it will ultimately produce some periodontal disturbance.

To plan dental restorations properly, a number of factors should be considered:

1. Teeth which have a hopeless periodontal prognosis should be extracted before any further planning. Actually, this is a conservative measure since it helps to control bone destruction around adjoining teeth.

2. Patients whose health is poor should not be subjected to extensive procedures.

3. As a general rule, all other factors being equal, older patients with periodontal disease respond better than do younger patients with a similar degree of pathology.

4. The success of many restorations will depend on the extent of patient cooperation in maintaining good oral hygiene, and in abolishing abnormal biting habits.

The preparation of the mouth for restorations should include the following procedures when necessary:

1. Prophylactic treatment.
2. Occlusal equilibration or reshaping of teeth.
3. The development of effective home-care habits.
4. Periodontic therapy where necessary.

Relative Caries-Inhibiting Value of Sodium Silico-Fluoride and Sodium Fluoride.

by JOHN K. PETERSON, D.D.S., M.P.H., and Wm. A. JORDAN, D.D.S., M.P.H.
Journal of Dental Research, February 1956.

A total of 610 children divided into 3 groups were given one, two, or four 0.9 per cent sodium silico-fluoride treatments on one side of the mouth and four treatments of 2 per cent sodium fluoride or nothing on the opposite side, as follows:

Project I: Four treatments sodium silico-fluoride and four treatments sodium fluoride.

Project II: Two treatments sodium silico-fluoride and nothing on opposite side.

Project III: One treatment sodium silico-fluoride and four treatments sodium fluoride.

After one year the results were:

Projects I and III: More DMF teeth

and surfaces developed on sides treated with sodium silico-fluoride.

Project II: Fewer DMF teeth and surfaces developed on the treated sides than on those untreated.

Whereas sodium silico-fluoride appeared to reduce dental caries by a small amount, the results after one year indicate sodium fluoride to be probably more effective. The differences in the incidence rates, however, are not statistically significant. Fewer than one-half of the children studied developed new DMF teeth during the first year. Perhaps after more caries develop, examinations will give a clearer picture of any differences in caries reduction resulting from treatment with the two different solutions.

Comparison of Tissue Response to Rotary and Ultrasonic Dental Cutting Procedures.

by LOUIS S. HANSEN, D.D.S., U.S. Navy, and ARNE G. NIELSEN, D.D.S., Bethesda, Md.

The Journal of the American Dental Association, February 1956.

The object of this paper is to report the observations of a limited study concerned with the comparative biologic response to rotary and vibrational cutting. This experiment was conducted to contribute data toward a biologic evaluation of the vibration cutting process. Such an evaluation is necessary to determine the feasibility of clinical application of the process.

Forty guinea pigs were used in the study. One of the four continuously erupting incisors in each animal was cut with the ultrasonic vibration process; one other incisor was cut with a conventional rotary instrument and the remaining two were left uncut for controls.

A comparison of the histologic alterations present in the rotary group with those in the control group revealed that the severity of the changes appeared about equal, although the alterations were proportionately more frequent in the group cut by rotary instruments.

In comparing the changes observed in the group of teeth and control groups, it was considered significant that every tooth in the ultrasonic group exhibited alterations ranging from "plus one" to "plus four"; whereas, in the rotary and

control groups, less than a fourth of the teeth revealed changes, and these changes were never more than minimal. Only the teeth in which cuts were prepared by the ultrasonic method showed disturbances in dentinogenesis. It would appear then that in operations on the incisor teeth of guinea pigs, some factor connected with the ultrasonic dental cutting instrument instituted changes of a more severe nature than those associated with the conventional rotary instrument. The histologic changes observed were non-specific in nature. The factor or factors responsible for their occurrence were not determined.

This report is concerned with what was seen at the end of a two week postoperative period. It is emphasized that this study applies only to the ultrasonic cutting instrument employed and to the animals used. Analogous results in human beings or other animals with the same or other ultrasonic instruments cannot be assumed. Nevertheless, the experiment was conducted on living tissues, and the comparative results of the two methods employed were considered valid and significant. The attempt to determine in continued studies why such differences exist appears justified.

Another aspect of maternal and child nutrition about which we need to know much more is the relation of nutrition to healthy teeth and to their resistance to caries. It seems to be well established that the development of structurally sound teeth is dependent on a supply of nutrients that have their source in the ingested food. The argument begins on the question of the effect of diet on the susceptibility to caries of the fully formed tooth. Many discussions have been devoted to that topic, but the net result, it seems to me, is that the proponents of the various schools of thought have become more convinced than ever of the validity of their evidence whereas neutrals have become only more confused.

Fortunately, research on this question continues, and the prospects of an answer become brighter through the use of such new tools as electron microscopy and radioactive tracer techniques. There is certainly some indication from recent studies that enamel is permeable both from the oral cavity and the bloodstream.

Public Health Reports, February 1956.

CONVENTION SUPPLEMENT



Joint Meeting

THE CANADIAN DENTAL ASSOCIATION

and

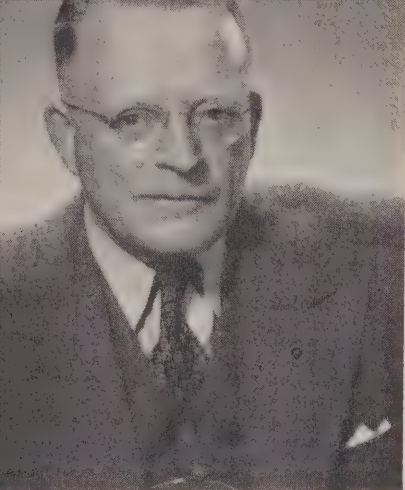
THE ALBERTA DENTAL ASSOCIATION

JUNE 3, 4, 5, and 6 — 1956



Banff Springs Hotel

Banff, Alberta



Dr. R. R. McIntyre
Photo—Matthews

Greetings to all—

The committees in charge of this convention have succeeded in preparing a well-balanced programme, and so arranged that each may attend all presentations.

Banff needs no introduction and you are assured of a truly "Western Welcome" and hospitality.

R. R. McINTYRE,

President, Canadian Dental Association

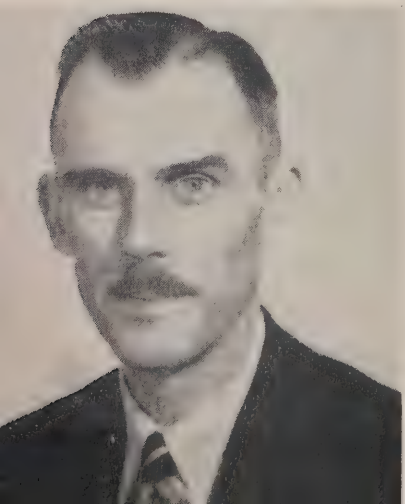


Dr. E. R. Upton
Photo—Matthews

It is a great pleasure to welcome you on behalf of the members of the Alberta Dental Association to the first joint C.D.A.-A.D.A. convention ever held in Alberta. An outstanding programme has been arranged and the surroundings provide a beautiful setting—Banff!

E. R. UPTON,

President, Alberta Dental Association



On behalf of the members of the Convention Committee, I extend a cordial greeting. We sincerely hope our efforts provide an enjoyable Convention for all.

H. BADEN POWELL,

Convention Chairman

Dr. H. Baden Powell



Banff Springs Hotel Swimming Pool and view of the Bow Valley

PROGRAMME

Subject to revision

SUNDAY, JUNE 3, 1956

- 2.00- 5.00 P.M. — Registration Garden Lounge
 8.30 P.M. — Musicales Mt. Stephen Hall
 9.30 P.M. — Floor Show Ballroom

MONDAY, JUNE 4, 1956

- 9.30-10.30 A.M. — Essay Main Ballroom
 Dr. H. M. Worth — *"The Interpretation of Dental Radiographs"* — Basic Principles.
 10.45-11.45 A.M. — Essay Main Ballroom
 Dr. Sidney T. Williams—*"Stability in Complete Dentures."*
 12.15 P.M. — Luncheon Fairholme Dining Room
 Canadian Dental Association
 Speaker: Dr. R. R. McIntyre — The President's Report.
 2.30- 3.30 P.M. — Essay Main Ballroom
 Dr. Alton W. Moore — The Grieve Memorial Lecture
"Orthodontic Ideals and Realities"
 3.30- 4.30 P.M. — Essay Main Ballroom
 Dr. Arne F. Romnes — *"An Evaluation of the New Developments in Operative Dentistry."*
 6.00- 7.00 P.M. — Royal Canadian Dental Corps Association
 Cocktail Hour North Fairholme Room
 9.00-10.00 P.M. — Concert Mt. Stephen Hall
 10.00 P.M. — Dancing and Entertainment Ballroom

TUESDAY, JUNE 5, 1956

- 9.00-10.00 A.M. — Essay Main Ballroom
 Dr. H. M. Worth — *"The Interpretation of Dental Radiographs"*— continued.
 10.00-11.00 A.M. — Essay Main Ballroom
 Dr. Arne F. Romnes—*"Gold Inlays by the Direct Method."*
 11.00-12.00 A.M. — Essay Main Ballroom
 Dr. Sidney T. Williams — *"Immediate Dentures."*

IN BRIEF

- 12.15- 2.00 P.M. — Luncheon Fairholme Dining Room
Jointly with the Ladies
Sponsored by the Government of the Province of Alberta.
Speaker: Premier Ernest C. Manning.
- 2.30- 3.30 P.M. — Lecture Main Ballroom
Dr. Frank Martin — will present the premiere of his film
"Crown and Bridge Procedure."
- 3.30- 5.00 P.M. — Table Clinics Garden Lounge
Scientific Films
- 6.00 P.M. — Class and Fraternity Dinners
- 9.00-10.00 P.M. — Concert Mt. Stephen Hall
- 10.00 P.M. — Dancing and Entertainment Ballroom

WEDNESDAY, JUNE 6, 1956

- 9.00-10.00 A.M. — Essay Main Ballroom
Dr. H. M. Worth — "The Interpretation of Dental Radiographs" — continued.
- 10.00-11.00 A.M. — Essay Main Ballroom
Dr. Sidney T. Williams — "The Tongue and its Significance in Denture Construction."
- 11.00-12.00 A.M. — Essay Main Ballroom
Dr. Arne F. Romnes — "Practical Procedures in the use of Amalgam."
- 12.30- 2.00 P.M. — Luncheon Fairholme Dining Room
Speaker to be announced.
- 2.00- 3.00 P.M. — Lecture Main Ballroom
Oral Surgery — Presented by the Canadian Society of Oral Surgeons.
- 3.00- 5.00 P.M. — Table Clinics Garden Lounge
Scientific Films
- 5.30- 6.30 P.M. — Cocktails and Social Hour
- 6.30 P.M. — Presidents' Dinner Fairholme Dining Room
- 9.00-10.00 P.M. — Concert Mt. Stephen Hall
- 10.00 P.M. — Dancing and Entertainment Ballroom
"The Presidents' Ball."



ESSAYISTS

RADIOLOGY

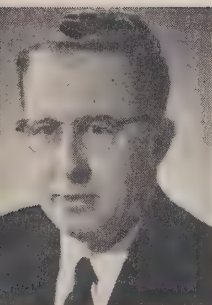
H. M. Worth, F.R.C.P. (c), F.F.R., M.R.C.S. (Eng.), L.R.C.P. (Hon), L.D.S., R.C.S. (Eng.), D.M.R.E. (Camb.) Diplomate in Radiology, American Board of Radiology.

Dr. Worth who is now residing in Vancouver is special lecturer in Radiology for the Faculty of Dentistry, University of Toronto. He was one time Radiologist and Lecturer in Radiology to Guy's Hospital and its medical and dental schools.

Dr. Worth will present three lectures under the title:
"The Interpretation of Dental Radiographs."

Synopsis:

- First Day:** Basic Principles.
Short study of normal radiographic appearances.
Abnormal conditions:
Conditions simulating dental caries.
Inflammation of Bone:
Brief Review of Pathogenesis.
Correlation with radiographic findings.
Osteomyelitis, acute alveolar abscess.
Chronic apical infections.
Discussion Period.
- Second Day:** Radiographic differential diagnosis of apical infections.
Periapical osteofibrosis (cementoma).
Sclerosing osteitis.
Radiographic differentiation of sclerosing osteitis.
Discussion period.
- Third Day:** Radiographic findings in periodontal diseases.
Short study of malignant conditions of jaw appearances which should lead to immediate diagnosis.
Discussion period.



OPERATIVE DENTISTRY

Arne F. Romnes, D.D.S., M.S.D., F.A.C.D.

Professor and Chairman of Operative Dentistry at Northwestern University, Chicago. He is present chairman of the Operative Dentistry Section of the American Dental Association. Dr. Romnes has appeared as an essayist and clinician before national, state and local dental associations throughout the United States and Canada. He is the author of several articles in the American and Canadian dental journals and the International Dental Journal pertaining to Operative Dentistry and Dental Education.

Dr. Romnes will present three lectures:

Synopsis:

- First Day:** "An Evaluation of New Developments in the Field of Operative Dentistry."
"A consideration of the recent research aspects, the present status of acrylic resins, and the new methods for cutting of tooth structure. This will include a discussion of the optimum speeds for rotary equipment, the hydraulic turbine handpiece, the new super-speeds, the ultrasonic techniques in relation to their biological effects and their adaptation to practical procedures in the office of a general practitioner."
- Second Day:** "Gold Inlays by the Direct Method."
"In spite of the excellent results being obtained with the elastic impression materials, there are definite indications for constructing gold inlays by the direct method. A simple and efficient technique will be described taking into consideration the physical properties of the various materials, assuring restorations of enduring quality."
- Third Day:** "Practical Procedures in the use of Amalgam."
"Silver amalgam holds a very prominent spot in the field of Operative Dentistry. There is need for careful attention to seemingly unimportant details, to obtain the best results with this material. Careful consideration will be given to correct cavity design, matrix application, preparation, condensation and finishing procedures."

PROSTHETIC DENTISTRY

Sidney T. Williams, D.D.S., M.S., F.A.C.D.

Professor and Director of the Department of Prosthetics, Washington University, School of Dentistry. Graduated from the University of Michigan in 1933 and was engaged in general practice until 1940. He received his Master of Science degree in Prosthetic Dentistry in 1942 and was Assistant Professor, University of Michigan, School of Dentistry until 1947, when he assumed his present post.

Dr. Williams will present three lectures:

Synopsis:

First Day: "Stability in Complete Dentures."

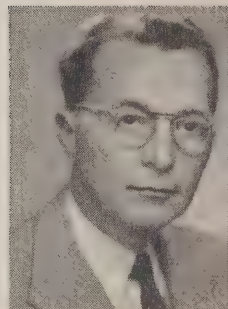
A discussion of the principles often overlooked that influence stability with complete illustration.

Second Day: "Immediate Dentures."

Emphasis will be placed on preliminary evaluation as to success or failure in immediate dentures.

Third Day: "The Tongue and its Significance in Denture Construction."

Consideration of the tongue's physiologic activity in construction of the lower denture. Illustrated with slides and movies.



ORTHODONTICS

Alton W. Moore, D.D.S., M.S.

Professor and Executive Officer of the Department of Orthodontics, University of Washington, School of Dentistry.

Dr. Moore will present the Grieve Memorial Lecture, directed to the general practitioner. "Orthodontic Ideals and Realities."



CROWN AND BRIDGE

Frank Martin, D.D.S.

Will present the first showing of his excellent film to any convention.

Title: "Crown and Bridge Procedure."



ORAL SURGERY

Sponsored by the Canadian Society of Oral Surgeons.

TABLE

It is expected there will be approximately forty table clinics and several scientific films. The following is an incomplete list of the clinics and does not include those whose subjects have not been sent in to the committee in charge.

ORAL PATHOLOGY

Dr. K. A. McMurchy,
Faculty of Dentistry, University of Alberta.

ORAL SURGERY

Dr. George A. Morgan — Toronto
"Unusual bone, tooth and tissue findings."

Canadian Society of Oral Surgeons
"Oral Surgery Consultation."

Dr. Edward J. Novak — Seattle
"Instrumentation for conservative oral surgery."

Dr. George M. Robb — Vancouver
"Oral Surgery."

OPERATIVE DENTISTRY

Dr. M. M. Chechik — Vancouver
"Retention simplified employing prefabricated gold pins."

Dr. Wm. Miller — Vancouver
"Gold foil — cavity preparation and instrumentation."

ORAL ROENTGENOLOGY

Dr. Jerome M. Zech — Seattle
"Oral roentgenology."

Dr. H. R. MacLean — University of Alberta
"The advantages of the extended target film distance in dental roentgenology."

CLINICS

ORTHODONTICS

Orthodontic Section Group Clinic

- 1) Dr. W. A. Quigley — University of Alberta, Edmonton
"Diagnosis."
- 2) Dr. Gordon Mitchell — Regina
"Correction of Cross-Bites."
- 3) Dr. Robert Perry — Calgary
"Handling of Quick Cure."
- 4) Dr. J. J. Shacter — Saskatoon
"Fixed Space Maintainer."
- 5) Dr. George Street — Calgary
"Space Regainers."
- 6) Dr. R. D. Haryett — University of Alberta, Edmonton
"Habits."
- 7) Dr. B. J. Eastwood — University of Alberta, Edmonton
"Canine Interference."
- 8) Dr. Van. E. Christou — Lethbridge
"Dangers of Extraction."
- 9) Dr. R. D. Leuty — Toronto
"Thumbsucking Problems."
- 10) Dr. T. Turner — University of Toronto
"The Correction of Cross-Bites in the Deciduous Dentition."

MISCELLANEOUS

- Dental Nurses Clinics.
- National Department of Health and Welfare Exhibit on Preventive Dentistry.
- No. 54 Coy. R.C.D.C. — Calgary.
- Oral Surgery.
- Operative Dentistry (High Speed).

PRESIDENTS' BANQUET AND BALL

in the

Main Ballroom

Banff Springs Hotel

WEDNESDAY, JUNE 6, 1956



Music by

MOXIE WHITNEY AND HIS ORCHESTRA



Dinner—6:30 P.M. Fairholme Dining Room

Dancing and Entertainment—9:30 P.M. Ballroom



Note . . . The price of this gala event is included in your registration fee.

ART EXHIBIT

The art exhibit will be open each day in the
gallery over-looking the main lobby

Many examples of the arts and crafts will be displayed.

SPECIAL FUNCTIONS

SUNDAY NIGHT FLOOR SHOW

in the Main Ballroom and

Moxie Whitney and his Banff Springs Hotel Orchestra

Sunday, June 3, 10:00 P.M.

MUSICALE — CONCERT

Every Evening

Mt. Stephen Hall

Nationally Known Artists

Banff Springs Hotel

9:00-10:00 P.M.

CANADIAN DENTAL ASSOCIATION LUNCHEON

Speaker: Dr. R. R. McIntyre, President, The Canadian Dental Association—*The President's Report*

Ladies Invited

Fairholme Dining Room

Monday, June 4, 12:15 P.M.

ROYAL CANADIAN DENTAL CORPS ASSOCIATION

is arranging a get-together—by way of an informal cocktail hour—of all former and present officers of the Corps and dentists who are veterans of other services, and their wives and ladies.

North Fairholme Room

Monday, June 4, 6:00-7:00 P.M.

Tickets may be purchased at the registration desk

ALBERTA PROVINCIAL GOVERNMENT LUNCHEON

The Government of the Province of Alberta is sponsoring a luncheon to which all delegates and their wives are cordially invited to be guests.

Speaker: The Honourable E. C. Manning, Premier
of the Province of Alberta

Fairholme Dining Room

Tuesday, June 5, 12:15 P.M.

OUT-DOOR ENTERTAINMENT

SWIMMING AND TENNIS

The azure oval of the outdoor mineral pool, its adjoining patio and putting green, all command a breath-taking million dollar view of the Bow Valley. In these surroundings one and all can revel in the most superb of holiday settings.

Adjoining the Venetian garden and conservatory six pine-enclosed courts beckon the tennis enthusiast.

GOLF

One of the highlights of the convention will be the opportunity to golf on the world famous mile-high Banff Springs golf course which is located only 100 yards from the hotel. Top-flight golfers the world over agree that every one of Banff's 18 holes is a challenge regardless of the skill of your game, expert and novice alike will relish exploratory hours spent amid the majestic grandeur and rugged beauty of the course.

The 19th hole offers a rustic old-world cocktail lounge in the club-house.

RIDING

Operated in conjunction with the hotel are stables offering complete trail-riding service—sure-footed mountain ponies and skilled guides.

TOURS

The Banff Springs Hotel is located within range of many other world famous beauty spots. Lake Louise, Gem of the Canadian Rockies, only 40 miles west of Banff, is considered one of the world's seven most perfect landscapes. Another interesting side trip is to the famous Columbia Ice Fields—150 square miles of ice formed by the confluence of the Athabasca Dome and the Saskatchewan glaciers, the melting waters of which feed the mighty Columbia, Saskatchewan and Mackenzie rivers. Emerald Lake, Yoho Valley, Moraine Lake, Valley of the Ten Peaks, Radium Hot Springs and Sinclair Canyon are scenic attractions in their own rights. All these points are readily accessible by private car or through the hotel's glass-topped buses.

Following the convention, first class accommodation in all of these locales offers continuity of Western hospitality in mountain lodges and chalets. The Trail Riders of the Canadian Rockies and the Alpine Club convene in this region each summer. The alpine beauty of the surrounding country is complimented by the fact that several Hollywood studios have used it as a setting for recent movies featuring such well-known stars as Marilyn Monroe, Alan Ladd, James Stewart, Shelley Winters, Robert Mitchum and others.

LADIES' PROGRAMME

(subject to revision)



Mrs. G. L. Locke
Photo—Rosettis



Mrs. R. R. McIntyre
Photo—Mackie

To the Ladies:

This is the year for you to come to Banff! Our Ladies' Committee for the convention is busy planning a program that we hope will give you an unforgettable holiday at one of the world's most beautiful resorts. There will be golfing, bridge, scenic drives, dancing every night . . . all that Banff can offer, plus the companionship of the new friends you will make among women from all over Canada.

Let's meet at Banff in June!

Sincerely,

Ralphine Locke, Chairman of the Ladies' Committee

Sunday, June 3

- Afternoon — Registration
- Evening — Concert—Mt. Stephen Hall
Floor Show—Ballroom

Monday, June 4

- Morning — Tours
- Luncheon — C.D.A. with your husband—Fairholme Room
- Afternoon — Tea—Bridge
- Evening — Concert—Mt. Stephen Hall
Dancing—Ballroom

Tuesday, June 5

- Morning — Tours
Golf Tournament
- Luncheon — Sponsored by the Government of the Province
of Alberta—Fairholme Room
- Afternoon — Golf
Bridge
- Evening — Concert—Mt. Stephen Hall
Dancing—Ballroom

Wednesday, June 6

- Morning — Tours
Golf Tournament
- Luncheon — Special Ladies' Luncheon
Entertainment
Favors—Alhambra Room
- Evening — Presidents' Banquet and Ball

Canadian Dental Nurses and Assistants Association and Alberta Dental Nurses and Assistants Association



TENTATIVE PROGRAM

Sunday

Registration

Musical

Reception

Monday

- 9.30-10.00 — Registration
- 10.00-11.00 — Opening Ceremonies — Dr. R. R. McIntyre
- 11.00-12.00 — Lecture — Dr. J. D. McLean, Dean of Dentistry, Dalhousie University.
- 12.15 — Lunch
- 2.30- 3.30 — Grieve Memorial Lecture
- 3.30- 4.30 — Provincial Meeting
- 5.00- 6.00 — Cocktail hour — with guests.

Tuesday

- 9.30-11.30 — Canadian Annual Meeting
- 12.15- 2.00 — Lunch — Sponsored by Alberta Government
- 2.00- 2.45 — Lecture — Dr. George Morgan, Toronto
- 3.00- 5.00 — Table Clinics

Wednesday

- 9.30-10.30 — Canadian meeting
- 10.30-11.30 — Lecture — Dr. H. R. McLean, University of Alberta
- 12.15- 2.00 — Lunch & Guest Speaker — Dr. John W. Clay, Calgary
- 2.00- 3.00 — Alberta Election and Installation of Officers, and presentation of trophies
- 3.00- 5.00 — Table Clinics
- 6.30 — Presidents' Dinner and Dance.

ADVANCED REGISTRATION

Joint Meeting

THE CANADIAN DENTAL ASSOCIATION

ALBERTA DENTAL ASSOCIATION

BANFF SPRINGS HOTEL

JUNE 3-6, 1956



REGISTRATION FEE \$30.00

(Includes ladies' registration)

Make Cheques Payable to: C.D.A.-A.D.A. CONVENTION



Mail Application Form Below to:

DR. J. A. DUNCAN, 3047 - 25TH ST. S.W., CALGARY, ALTA.

NAME: Dr.

ADDRESS:

CITY: Prov.
or
State

ACCOMMODATION DESIRED:

..... DOUBLE OCCUPANCY, Double bed

..... DOUBLE OCCUPANCY, Twin bed

DATE OF ARRIVAL

ADVANCED REGISTRATION — C.D.N. & A.A.

NAME:

ADDRESS:

CITY: PROV.

ACCOMMODATION: Single

Double

OTHER OCCUPANT OF ROOM:

ADDRESS:

TIME OF ARRIVAL:

HOSPITAL DENTAL SERVICES

In the modern hospital, dentistry has an important role in the prevention and treatment of oral disease in relation to the patient's systematic health. In the near future this may also mean the prevention treatment and maintenance of oral health in those people within the community who are in the low income bracket.

Dental disease does not differ from other diseases except that it has a higher incidence. Disease anywhere in the body cannot be considered as a purely local condition, it is the cause or effect of some more general disturbance. We cannot therefore, differentiate between dental disease, ear, nose, throat, heart, intestinal and other diseases in so far as the patient's general wellbeing is concerned. We must look at the individual as a whole not as teeth, toes and tonsils.

The people in our communities are hoping for, if not demanding, a complete health service in which the diagnosis, prevention and treatment of dental disease must enjoy a major part. Our profession must be prepared to meet this demand.

Much of the demand is already being cared for in private practice and it may be said that this is the logical place, but it is inadequate for the demand that may soon descend upon us.

Hospitals have a great responsibility in the rendering of this service, but at the present time many are falling short because of the lack of a dental service. Unless we and the hospitals institute some such service the government may

offer us a service with all the political implications.

The hospital dental service must provide for the diagnosis and treatment of oral diseases for those patients confined to hospital. It is a well proven fact that although the theory of focal infection is relatively unimportant, the removal of oral and other secondary infections does enhance the general treatment and shorten the patient's stay in hospital.

The diagnosis and treatment of maxillo-facial injuries is a dental responsibility and in the more gross injuries, a co-operative effort with the department of surgery offers the best in treatment for the patient. Dental consultation in respect to malignant lesions of the oral cavity is important in both the prevention and treatment of these diseases. The surgical treatment of benign lesions is within the dental field. The departments of medicine, otolaryngology, neurology, dermatology and plastic surgery frequently benefit by consultation with the dental department.

Few hospitals operate an out-patient department for the treatment of the ambulatory patient, and "follow-up clinics" for patients after discharge from hospital. The out-patient service offers an unlimited field for the prevention of disease by means of the early diagnosis and treatment of incipient disease. The hospital seems to be the logical place for this service, because of staff and equipment, for those people who cannot afford the private practitioner.

The dental profession has neglected this large group, resulting in some lack

of confidence by the public and sister professions. We must realize our responsibilities to the community in which we live and contribute some free time to the treatment of the indigent sick.

The chief of the dental department must be one who has the professional and personal respect of the profession in the community. His position in the hospital must be equal to those at the head of other services. He should be a member of the medical advisory board so that he may know of the functioning of the hospital and co-ordinate the dental with other services. His staff composed of dentists from the local community will receive the satisfaction of helping those in need and incidentally receiving a post-graduate training second to none.

All hospitals no matter how small should have, if not physical space for a dental service, a dental consultant who will offer his knowledge and skill to the

treatment of the sick patient. A 200 bed hospital should have a dental service comprising an operating room and a combined business, consulting and staff room. In larger hospitals, more operating rooms will be required and especially if an out-patient service is being rendered. Out-patient services will enlarge in all hospitals as we accept our responsibility for the treatment of those people in the low income group.

Dental internships in hospitals should be encouraged because the dental student lacks clinical experience upon graduation. If sufficient internships were available they would be as popular and as necessary as they are in medicine. The intern should receive training in all departments in the hospital—he is not just a dental operator. At the end of his internship he should have a basic knowledge of the branches of medicine as they are related to his own field and an increased confidence in his own ability.

HIGHLIGHTS OF THE ONTARIO DENTAL ASSOCIATION CONVENTION

ROYAL YORK HOTEL, TORONTO—MAY 13, 14, 15 and 16, 1956

- ★ **Sunday Evening Musicale** The Leslie Bell Singers
- ★ **Dental Public Health Breakfast Meeting—Mon., May 14th** Dr. Harry Ebbs
- ★ **Monday Luncheon Speaker** Mr. Daniel Coughlan
- ★ **Dental Public Health Tuesday Luncheon** Dr. Herman Hilleboe
- ★ **Tuesday Evening** Dinner Dance and Floor Show
- ★ **Monday Evening** Ladies' Buffet Supper with guest speaker
Class and Fraternity reunion dinners

Essayists—

Dr. J. Clifton Eselman, Pittsburgh

Dr. Emmett Beckley, Kansas City, Mo.

Group Clinicians—

Dr. J. Clifton Eselman, Pittsburgh, Pa.
Dr. Emmett Beckley, Kansas City, Mo.
Dr. S. Charles Brecker, New York
Dr. T. M. Graber, Evanston, Ill.
Dr. Viggo B. Sorensen, Chicago, Ill.
Dr. W. F. Walford, Montreal
Dr. S. A. MacGregor, Toronto

Dr. Roy Hemmerich, Kitchener
Dr. M. E. Lucyk, Toronto
Dr. D. B. McAdam, Toronto
Dr. J. F. Methven, Toronto
Dental Public Health Committee
Royal Canadian Dental Corps
Investment Dealers' Association of Canada

EDITORIAL

The Convention—June 3rd-June 6th, 1956

Elsewhere in this issue will be found the Convention Supplement, that portion of the Journal which outlines the various functions at the National Convention and introduces some of the personalities who make them possible. It would be difficult to imagine a more beautiful setting for any convention than that which nurtures the Banff Springs Hotel. The view of Bow Valley from the Hotel is one of the most beautiful in the world. Opportunities exist for swimming, golfing, tennis, riding and touring. The proximity of Lake Louise, the Columbia Ice Fields, Emerald Lake, Moraine Lake, Yoho Valley, Valley of the Ten Peaks, Radium Hot Springs, and Sinclair Canyon, makes a photographer's Shangri-La.

Conventions, however, to be successful do depend upon more than their locations. Conventions, after all, are people. They are people with common interests and social adaptabilities. The members of the committee responsible for our national meeting were cognizant of these considerations when the programme was developed and therefore a happy mixture of scientific clinics and social functions has been achieved.

The scientific programme has been so

arranged that it is possible to be present at all clinics or lectures. The group clinic programme will cover the fields of Radiodontics, Prosthodontics, Orthodontics, Operative Dentistry, Crown and Bridge, and Oral Surgery. Approximately forty table clinics will be presented dealing with all facets of dental practice.

The Premier of the Province of Alberta, the Honourable Ernest Manning, and the President of the Canadian Dental Association, Dr. Reyburn R. McIntyre, will present luncheon addresses.

There will be a concert each evening in Mt. Stephen Hall followed by dancing and entertainment. The final function of the Convention, the President's Ball, promises to be an exceptional event.

This is the first joint Canadian Dental Association-Alberta Dental Association convention ever held in Alberta. The members of the committee responsible for organization have worked assiduously to arrange a meeting which will remain a most pleasant memory in the minds of all who attend.

Conventions are people. This meeting, therefore, will be enhanced by your attendance.

Bulletin! Re Deduction of convention expenses

In presenting the budget on Tuesday, March 20th, the Honourable Mr. Harris, Minister of Finance, announced that legislation would be introduced to amend the

Income Tax Act to permit the deduction of convention expenses. Further he stated that legislation would provide for deduction of such expenses incurred during 1955.

Dental Abstracts

We have now had opportunity of examining the first two issues of Dental Abstracts, the newest publication of the American Dental Association. The American Dental Association and especially Dr. Lon Morrey and Mr. N. C. Hudson should be congratulated upon the excellence of this journal.

At the present time more than 280 publications in many languages are surveyed in an attempt to bring the dental litera-

ture of the world to the various members of the dental profession irrespective of their interests or functions in the profession. All branches of dental practice are covered as well as many related fields.

Dental Abstracts fulfills a long-existing need in the profession and we are sure that in its role as a stimulant to the reading of dental literature, it will serve dentistry well by enabling busy practitioners to keep abreast of current knowledge.

Book Reviews

Inlays and Abutments. By Jacob R. Schwartz, D.D.S. 478 pages with 514 illustration. Glossary and index. Brooklyn, Dental Items of Interest Publishing Co., 1953. Price: \$8.00.

This volume appears to be a revised edition of Cavity Preparation and Abutment Construction in Bridgework, published 1936. Basically, the same material is covered in the two editions with changes introduced to bring inlay construction in line with present day use of diamond instruments, hydrocolloids and alginates. A chapter on electroplating by Dr. Martin Schwartz, the author's son, has been added and the material on Dental Casting Gold has been contributed by R. C. Brumfield, B.S. in C.E.

To the practitioner some of the material would seem elementary and many of the preparations and techniques discussed are now obsolete and only interesting from an historical standpoint. A new classification of cavities is offered which can be confusing to conventional thinking.

The text is well illustrated and the many fine drawings of cavity forms coupled with the step by step description of their preparation provide a stimulating source of suggestions for the practitioner.

Donald C. Gordon

Partial Dentures. By John H. Wilson, D.D.Sc. (Syd). Published by Angus and Robertson 1955. 291 pages, 192 illustrations. Price approximately \$10.00.

Since Edward Kennedy's first edition of Partial Denture Construction was published in 1928 there have been few if any texts published dealing entirely with the subject of removable partial denture prosthesis until comparatively recent times.

Dr. Wilson's book is an addition to the books and chapters in other books on the subject, and while it does not present much that is entirely new, it does include many of the details that often are neglected in practice. It emphasizes the necessity of a complete understanding of the anatomic, biologic and physiologic factors and jaw relations which are important to keep in mind in providing an effective service to patients who are semi-edentulous.

The chapter on impressions is brief and does not contain much information on this important step in procedure.

The chapter on occlusion is well handled. Kurth made the statement that "occlusion is the basis of dentistry" and the author has quite properly given this phase some emphasis. The reference

to the relationship between prosthodontics and periodontics is appropriate.

The chapters on retention, design and technical procedures are dealt with in more or less outline form but contain some useful information.

The paper and type are of good quality and this adds a great deal to the clearness of the illustrations. The references quoted indicate that the author has studied a wide range of material on the subject.

One cannot be other than in agreement with the author's attitude that removable partial denture prosthesis should be a preventive dental service. It is not sufficient for a dental student or graduate to be concerned merely with filling gaps. If he is going to provide a whole service he must think in terms of improving and maintaining function, esthetics, comfort and above all the preservation of the remaining structures.

R. J. Godfrey.

•
Operative Dental Surgery. By J. B. Parfitt, L.R.C.P., M.R.C.S., F.D.S.R.C.S. (Eng) and W. E. Herbert, L.R.C.P., M.R.C.S., F.D.S.R.C.S. (Eng). Sixth Edition. Published by The Mac-Millan Co. of Canada Ltd. Pages 454. Price: \$5.00.

To read a book, be it scientific or otherwise, without receiving little or much knowledge is practically an impossibility.

The reading of this volume is no exception to the above statement. However, with such a premium on the professional reading time of the dentist, it is felt that a more profitable and up-to-date book on Operative Dentistry is required. The interval of time between the First Edition of 1921 and the Sixth Edition of 1948 represents great changes in operative procedures and the years between 1948 and 1956 represent even greater advancement. While the principles of operative procedures, as presented by Black and others, still apply today, the improvements of this decade require a more modern approach to the subject. With the addition to previous editions of a few advances in operative technique, one cannot accept the book as up-to-date when it still spends time handling the subjects of arsenical treatment of the pulp; swaged crowns and mush bites; while it gives only one paragraph to hydrocolloids and makes no mention of high-speed procedures or diamond or carbide cutting instruments. It must be conceded that some of these latter things were not in general use in 1948 but this serves to re-emphasizes the need for a more recent publication. On the other hand the inclusion, in a textbook of operative dentistry, of a chapter on Periodontia is to be commended as a recognition of the interrelation of these two aspects of dentistry.

In short, "Operative Dental Surgery" represents good dental teaching of a decade ago. The reviewer does not recommend it for 1956.

R. A. Clappison

The Library

Additions

AMERICAN DENTAL ASSOCIATION: Dentistry in the United States of America. 1945. 81 pp. illus.

AMERICAN DENTAL ASSOCIATION: Dentistry at a century of progress. 1933-1934. 64 pp. illus.

CUDDON, E.: Hypnosis; its meaning and practice. 1955. 175 pp.

FINE, S.: Principles and practice of the dental assistant. 1955. 66 pp. illus.

FONES, A. C.: Preventive dentistry for dental students. 1925. 220 pp. illus.

KELLS, C. E.: The dentist's own book. 1925. 510 pp. illus.

McCALL, J. O.: Fundamentals of dentistry in medicine and public health. 1938. 160 pp. illus.

ROSS, D. E.: Salivary gland tumors. 1955. 86 pp. illus.

SIMONS, A. M., & SINAI, N.: The way of health insurance. 1932. 215 pp.

WILSON, J. H.: Partial dentures. 1955. 294 pp. illus.

The Association

ANNUAL MEETING

BANFF, ALBERTA

Board of Governors' Meeting

May 30th - June 2nd

Reservations

As you would expect, in a hotel set in surroundings defined by nature, some rooms have better views than others, therefore the committee has decided that, inasmuch as all rooms are equally well appointed and are at the same daily rate, in fairness to all, the principle of first come first served, will be adhered to, therefore

SEND YOUR REGISTRATION FEE (\$30.00) NOW TO:

Dr. J. A. Duncan,
3047-25 St. S.W.,
Calgary, Alberta.

Reduced Plane Transportation to Annual Meeting

Trans-Canada Air Lines state as follows:

"We are pleased to advise that we can offer an excellent rate to your delegates attending the Convention on a Group basis. They must travel together on the same flight but can return at their individual convenience, and there must be 10 or more in order to qualify for this group. The round trip rate for such group per person Toronto to Calgary is \$211.20 against the regular rate of \$237.60. Meals are served aloft, gratuities are prohibited, and your delegates will arrive fresh for the meeting."

Of necessity arrangements to take advantage of these rates must be made locally at each centre.

Fluoridation Notes

Kapuskasing, Ont. (Pop. 4,987) at the annual civic elections voted on fluoridation: In favour—1,027, Opposed—353.

Sillery, Que. (Pop. 12,800) officially started to fluoridate its water supply on January 24th last. C.D.A. Past President Gustave Ratté officiated at the ceremony.

Port Arthur, Ont. City Council voted in favour of fluoridation on January 9th (9 to 1).

Ottawa, Ont. City Council voted favourably on fluoridation on December 19th last.

Saskatchewan Post Payment Plan Instituted

The Saskatchewan Dental Association has initiated a post-payment plan under the name of Saskatchewan Dental Services. The Association has underwritten the costs involved in setting up the plan. All members of the Saskatchewan Dental Association are entitled to use the plan. Initially each participating dentist will pay a small service charge of \$2.00 per month (or \$20.00 a year). It is hoped that this service charge may be gradually reduced.

The plan is operated by the Association on a non-profit basis and organized for the convenience of the public. The plan makes possible, payment for completed dental services on the instalment plan to fit the family budget. No interest is charged on the unpaid balance although a small service charge to cover administration is shared by the patient and the dentist.

The Saskatchewan Dental Association is the first dental organization in Canada to administer a non-profit plan of this nature.

Economic Security

Problems in the Administration of Estates

by TERENCE SHEARD, Q.C.*

PART II

At the other extreme from those who give the preparation of a will too little thought are those who wish to impose such detailed and rigid regulations on their beneficiaries that, in effect, no provision is made for inevitable changes in circumstances the nature of which cannot possibly be foreseen years in advance. All lawyers are familiar with the celebrated case of the young lady who was left an income "so long as she shall continue to reside in Canada" a condition to which the courts found it very difficult to attach any precise meaning and ultimately held to be unenforceable. Still others seek to fasten their own prejudices on future generations by requiring them to adhere to the doctrines of some particular religious sect or to follow, or refrain from following, some other specified line of conduct; but, happily such provisions are less common to-day than they formerly were. Similarly, unwise rigidities can be attempted with respect to property, for example provisions that a certain asset is to be sold at a certain time, or not sold until a certain time, or used only for a specified purpose and so on. Such provisions assume a degree of foresight that no one in fact possesses. It is impossible for any of us to foresee in detail what will be the wisest course to follow in the circumstances that will exist long after we are dead and gone.

Practically all the problems that arise in the administration of estates, the legal problems at all events, occur because someone had a will that was either too sketchy, too brief and ill considered, or

else too rigidly detailed. Of course, there may be human complications that no one can avoid. Some families seem to possess a genius for disagreement and create trouble by the force of malice or perhaps because they enjoy the contest; but it is not such problems we are discussing here. Such situations aside, these two causes account for most of the difficulties and disappointments of which beneficiaries are accustomed to complain.

Strangely enough the causes referred to, which may be called "too little will" and "too much will" can both result in restrictions being placed on the powers of the executors and trustees of the estate that may prevent them from handling the assets and investments to best advantage. Obviously if the will says to the executors "you must sell this" or "you must not sell that" they have to follow these instructions whatever the situation may be at the time the instructions have to be obeyed. On the other hand, if the will says nothing at all on the subject the law steps in and fills the gap with its own strict rules. One of these rules, to which Mr. Leal referred in his articles, requires the trustees within one year from the testator's death to sell all assets that are not authorized by law as investments for trust funds and invest the proceeds in such investments or, in other words, in what are usually called "trustee securities".

In a period of rising prices and low interest rates this course, prescribed by law, may, in fact, be most unwise and may result in a severe loss to the beneficiaries both in income and ultimate capital appreciation. But if the will gives the trustees no power to hold or invest in stocks they are powerless. The law is clear and they must follow it because the

*Mr. Sheard is a recognized authority on Estates Administration and was selected by the Law Society of Upper Canada to write this article. Ed.

testator has not seen fit to give them the powers they need.

Here as elsewhere the solution is to be found in finding the happy medium between the two extremes, a task which fortunately experience has made relatively easy in all but the most complicated circumstances. In what may be called the normal family situation the preparation of a proper will presents no insuperable problem. It requires no more than a moderate modicum of time, thought and pro-

fessional assistance. Granted these minima there is no reason why the administration of an estate, whether large or small, should present any serious problems or difficulties, although it will, of course, require some care and skill on the part of those charged with the responsibilities of executors or trustees, whether individuals or a trust company. Contrary to the impression of many, most estates do accomplish the objects of those who created them and to the general satisfaction of all concerned.

The Corps

The Royal Canadian Dental Corps Conference was held at Army Headquarters, 7, 8, and 9 March. Militia and Regular Force delegates from army commands comprised:

Militia

Colonels:

- J. F. Edgecombe—Eastern Command
- L. E. Kent—Quebec Command
- C. L. Strachan—Central Command
- J. P. Whyte—Prairie Command
- C. S. Lea—Western Command

Regular Force

Colonels:

- K. M. Baird—Central Command
- G. B. Shillington—Western Command

Lieutenant Colonels:

- F. J. MacLean—Prairie Command
- H. L. Harris—Eastern Command
- P. R. LaSalle—Quebec Command

Conference delegates, officers of the RCDC in the Ottawa area, and their ladies, attended a formal dinner at which Lieutenant-General H. D. Graham, Chief of the General Staff, gave the address.

The Honorary Colonel Commandant of the Corps, Colonel G. L. Cameron, DSO, OBE, VD, and Mrs. Cameron, were hosts at an enjoyable reception and buffet tendered to conference delegates and their ladies.

Dr. J. I. Gordon has been accepted for enrolment in the RCDC with the rank of captain. Captain Gordon graduated from Dalhousie University Faculty of Dentistry in 1944. He served in the C.D.C. during the Second World War and until his retirement in 1946. Since that time he has practised in Halifax.

Captain and Mrs. G. LaHaye have recently returned from Europe where Captain LaHaye served with No. 1 Field Dental Unit.

The sympathy of the Corps is extended to Captain and Mrs. LaHaye in the tragic death of their infant son in December.

Colonel and Mrs. C. B. H. Climo were honoured guests at the Annual Ball of the RCAMC and RCDC Officers' Mess held in Montreal in February.

Captain R. G. Darling was a member of the Second Brigade hockey team which played an exhibition game against the Kitchener Waterloo Dutchmen in Germany. Although it fought valiantly, the brigade team took a drubbing.

The Provinces

Ontario

Dr. Don W. Gullett, secretary of the Canadian Dental Association, spoke before the **London and District Dental Society** recently. He spoke on the future of dentistry as it would be affected by a national health insurance plan.

A panel discussion on "organized dentistry" moderated by society president Dr. R. J. Sutherland, brought comments from Dr. R. R. McIntyre, president of the C.D.A.; Dr. P. G. Anderson, immediate past president of the C.D.A.; Dr. Gullett; Dr. H. R. Bateman, president of the Ontario Dental Association; Dr. R. O. Winn, district representative to the Royal College of Dental Surgeons; and Dr. C. L. Strachan, a governor of the C.D.A., and O.D.A.

Dr. Anderson spoke on a retirement income plan that is now available for members of the dental profession. The next meeting will be held with the London Academy of Medicine and Dr. E. A. Bartram will present a paper on "the will to live with heart disease." The society's annual ladies' night will be held at Hook's Restaurant, Friday, April 13.

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On Thursday, January 19th, 1955, the **Toronto Academy of Dentistry** held its first stated meeting at Osler Hall. The president, Dr. J. Bevan King, presided. After welcoming the Fellows, Dr. King spoke in detail of the work that the Academy is accomplishing in this area and the hopes and desires to improve this service in the future. The guest clinician of the evening was Charles B. Murta, D.D.S., F.A.C.D.; his subject, "Modern Bridge Retainers". Dr. Murta is Director of Clinics, Professor of Crown and Bridge and Operative Dentistry of the School of Dentistry, Georgetown University, Washington, D.C.

Dr. Murta discussed the selection, construction and use of various bridge retainers available to the profession today. He presented by means of Kodachrome slides the latest methods of preparation and fabrication of these retainers with emphasis on the full coverage of abutments. Following Dr. Murta's informative address, Dr. Frank Martin of Toronto commented, saying he was pleased that the teaching at Georgetown University very closely paralleled that at the University of Toronto. Following the meeting, a half hour of fellowship and refreshment was enjoyed by everyone.

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On Thursday, February 16th, 1956, the **Toronto Academy of Dentistry** held its sec-

ond stated meeting at Osler Hall. The clinician, James R. Hayward, D.D.S., M.S., spoke on "Avoiding Complications in Routine Oral Surgery". Dr. Hayward is well qualified to discuss this subject as he received his Master's Degree in oral surgery from Michigan in 1946 and completed a three year graduate training programme in oral surgery with internship at University Hospital, Ann Arbor. He is a member of the American Society of Oral Surgeons with a diploma from the American Board of Oral Surgery. Dr. Hayward reminded his audience that dentists were interested not only in teeth but in the entire oral cavity from the lips to the pharynx. He stressed the need for caution in all surgical procedures no matter how simple they appeared. His slides showed some examples where caution was lacking. Oral lesions should not just be shrugged off, but investigated. At the end of his address a question period was held. Dr. David MacDonald commented on Dr. Hayward's talk, saying that it was one of the most practical and complete addresses on the subject that he had heard. The usual half hour of refreshments and fellowship climaxed an enjoyable evening.

K. P.

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Dr. C. H. Loucks was elected president of the **Waterloo County Dental Society** at the recent annual meeting. Other officers are: Dr. W. Burgman, vice-president; and Dr. F. J. Stapleton, secretary-treasurer.

The meeting was held at the Iroquois Hotel, Galt, and the discussion dealt in the main with matters of interest to dentists generally.

Those present also dealt at some length with a bulletin from the public health committee of the Ontario Dental Association which was concerned largely with the fluoridation of water.

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The guest speaker at the January meeting of the **Hamilton Dental Association** was Dr. Lorne MacLachlan of Ottawa, speaking on full denture procedures. The presentation was divided into two portions. In the afternoon techniques including surgical preparation were reviewed. The evening presentation involved principally aesthetics and the new concept "Dentogenics."

Dr. Frank Martin from Toronto delivered a valuable and well illustrated clinic on crown and fixed bridge construction at the February meeting. Dr. Martin's usually well prepared and practical presentation was well received by our members.

Two distinguished members, Dr. A. Hill and Dr. W. McEwen, were honoured for

outstanding service with honorary memberships. Dr. L. Easter made the presentation to Dr. Hill, reviewing his remarkable record of service to his community and his profession over the past forty years. Dr. J. Stewart in a similar way made the presentation to Dr. McEwen with a friendly review of his forty years of service.

A special meeting was called to receive the President of the Canadian Dental Association and his party. Dentists were invited from the neighbouring societies.

Accompanying Dr. McIntyre were Dr. D. W. Gullett, secretary of the C.D.A., Dr. P. G. Anderson, C.D.A. governor, and Dr. A. Leckie, R.C.D.S. director. The program consisted of a panel discussion on organized dentistry with Dr. G. Morrow acting as moderator. The discussion and the questions that followed covered a wealth of interesting material on how dentistry is governed. It was a memorable evening that left us inspired and confident in our leadership.

W. H. F.

At a meeting recently of the **Lambton County Dental Society** in Sarnia, Dr. Gordon Nikiforuk, associate professor of preventive dentistry, University of Toronto, told members of the many benefits to be gained by the fluoridation of public water supplies.

Exhaustive scientific and medical tests have proved there are no harmful effects on the human body of controlled fluoridation of water to prevent tooth decay, Dr. Nikiforuk reported. He said that 23 public health, dental, research and government bodies in Canada, United States and United Kingdom have attested to the safety and effectiveness of fluoridated water.

Dr. William McLean of Sarnia introduced the speaker.

The following have been elected to the Executive of the **Sudbury District Dental Society**: Dr. P. G. Chalifoux, President; and Dr. G. Tokaryk, Secretary-Treasurer.

Dr. R. L. Twible, of the Faculty of Dentistry, of the University of Toronto, spoke on full denture prosthesis at the February meeting of the **Kingston and District Dental Society**. He gave a lecture in the afternoon and again in the evening.

Dr. John Lyon presided at the dinner meeting in Morrison's Lounge. The speaker was introduced by Dr. H. Treleaven and thanked by Dr. A. O'Hara. A large number of dentists was present from Kingston, Barriefield, Napanee, Picton, Sharbot Lake, Sterling, and Brockville.

On February 7th Dr. W. J. Langmaid of Oshawa, of the Board of Directors of the

Royal College of Dental Surgeons, and Dr. S. J. Phillips, Chairman of the Finance Committee of the Canadian Dental Association, addressed the members of the **Peterborough and District Dental Society** at the Kawartha Club and conducted a forum.

Sixteen dentists from the district attended. The speakers were thanked by Dr. W. J. X. Blackburn. Dr. Allan F. MacDougall and Dr. R. H. Campbell are the President and Secretary respectively, of the Society.

R. C.

British Columbia

The **Prince George and District Dental Society** has elected these new officers: President, J. C. McInnis; Vice President, Dr. J. A. Thorsness; Secretary-Treasurer, Dr. J. D. Newby.

Early in February all members of the society gave up part of the day in order that some 350 children in grades 1 to 7 could be dentally examined for the fluoridation survey. This information is the basis for which further surveys will be held yearly in order to assess the effects of fluorine upon the teeth. The group examined were all born in Prince George and have never been away from drinking city water for more than six weeks at a time; and so these children are the control group. The dentists who made the examinations were generally impressed with the condition of the children's teeth, which showed that a great many had had work done, especially those living in the older and more desirable residential sections.

For the past two years all the members of the society have taken turns addressing the pre-natal classes at the Cariboo Health Unit. The series of lectures is repeated every three or four months.

Children's dentistry was discussed at the February meeting of the **Victoria and District Dental Society** when Dr. Bob O'Neil of Vancouver gave an interesting lecture on Paedodontics which included many helpful hints on taking X-rays for children, the management of teeth with exposed pulps, and the prevention of future orthodontic problems. Introduced by Dr. Frank McCombie, the speaker was later thanked by Dr. Hugh Clarke.

The **Vancouver and District Dental Society** turned out in gratifying numbers to greet officials of the Canadian Dental Association who made their annual visitation on March 6.

Dr. L. W. Beamish, the Society president, acted as moderator during a panel discussion on "Organized Dentistry". Completing the panel were Dr. R. R. McIntyre, Presi-

dent, and Dr. Don Güllett, Secretary of the C.D.A.; Dr. Charles Whitworth, representing the Council of the College of Dental Surgeons of B.C.; and Dr. Wm. Miller, representing the Board of Governors.

Following words of wisdom and enlightenment from the panel members, who covered almost every branch of C.D.A. activities, there was a discussion period when the audience posed questions.

Dr. J. M. Mather, Head of the Department of Public Health in the medical faculty, spoke hopefully of the establishment of a dental school at U.B.C.

Dr. Harold Helm reported that the various study clubs were operating at full steam and that the matter of permanent club quarters was being given serious attention.

As a group, 80 per cent of the members of the Society have contracted on a prepayment basis to avail themselves of the services of physicians and surgeons through the M.S.A. (Medical Services Association). Covered are the dentists, their families and their employees.

D. H. M.

Alberta

The monthly meeting of the **Calgary Dental Society** in February marked the beginning of Dental Health Week. The meeting at 6 p.m. in the Palliser Hotel sun room was addressed by Dean W. Scott Hamilton of the University of Alberta school of dentistry.

A new executive was elected which will take office in August — they are: Dr. M. J. Lipkind, vice-president; Dr. Gordon Swann, newly-elected president; Dr. Don Thompson, treasurer; Dr. Ross Upton, immediate past president, and Dr. W. A. Nixon, secretary.

Dr. James Zimmerman spoke before the **Calgary and District Dental Society** at its annual meeting recently. His subject was the fluoridation of public water supplies at which time he cited a list of scientific reports on the effects of fluorine as a deterrent to tooth decay, and of its effect on physical health.

Dr. Gordon C. Swann was elected president of the society and other members of the new executive include — vice-president, Dr. Max J. Lipkind; secretary, Dr. William A. Nixon, and treasurer, Dr. Donald L. Thompson. Dr. Swann succeeds Dr. Ross Upton to the presidency. The new officers assume duties August 1.

Dr. Baden Powell reported that plans were well underway for the Canadian Dental Association's convention. It was announced the C.D.A. convention will feature the premiere of a film by Dr. Frank Martin

of the University of Toronto, illustrating new dental techniques.

At this meeting a technical paper entitled "Root Canal Therapy and Technique" was presented by Dr. Max J. Lipkind of Calgary.

Dr. W. S. Hamilton, University of Alberta Dean of Dentistry, was the guest speaker at the **Dental Undergraduate Society's** annual banquet recently. His topic was "Problems of Dental Education."

Head-table guests included Dr. and Mrs. Hamilton, Dr. and Mrs. R. V. Blackmore, Dr. and Mrs. R. S. Van Alstyne, Mr. A. G. Kluzak, DUS president, and Mr. A. A. Taylor. Dentistry professors and their wives were invited as special guests.

Mr. Taylor, a member of the graduating class, proposed a toast to the faculty, to which Dr. Blackmore, honorary president of the graduating class, replied. The toast "to the ladies" was given by Dr. Van Alstyne and Mrs. W. D. McGinnis replied. Mr. Kluzak was the toastmaster.

Dancing followed the banquet. Afterward, the 26 members of the graduating class were the guests at a buffet supper at the home of Mr. A. Makin, clinical administrator.

The **Central Alberta Dental Society** held its monthly meeting January 25, 1956 in the Buffalo Hotel with sixteen dentists in attendance. Guest speaker for the evening was M. R. Mackenzie, who chose as his topic "Dental Accounting and Income Tax."

Dr. Charles G. Duke, lecturer in Dental Materials, attended a short course in Dental Materials at the University of Michigan, from January 30th to February 4th, 1956. Lectures were given by faculty members and visiting lecturers from both dental materials and the clinical sciences, in an effort to show the relationship between these two fields of dentistry.

Dr. Duke's attendance was made possible by the generosity of contributors to the University of Alberta's Postgraduate Scholarship Fund in Dentistry.

Quebec

The monthly meeting of the **Montreal Dental Club** was held in the Queens Hotel, Feb. 20, 1956.

The club was privileged to be addressed by one of its own members, Dr. E. T. Bourke, who spoke on "Looking Backwards and Forwards Too".

Dr. Bourke, in looking backwards, reminisced on his own thirty odd years of prac-

tice and the changes in dentistry that have evolved during that period. He discussed the primitive equipment by today's standards, the effect of the development of better equipment and techniques, and in particular the common use of the x-ray machine.

He stressed the point that dentistry has become a highly respected profession in the past thirty years, with better liaison between the profession and the government, the Quebec board and Universities. Dr. Bourke felt that even with the new teaching facilities of our universities, that the main attribute for good dentistry is that the individual have the proper spirit and desire — "equipment does not a dentist make".

Other major advances have been, the generalized use of local anesthesia, improvement of materials, but here he warned a note of caution is necessary in our acceptance of new techniques, materials and equipment.

Dr. Bourke then discussed the advancements in specialties, and felt that they very definitely have a place in the profession.

In looking forward he feels that an increased loyalty to our clubs and profession is necessary. An interchange with other clubs and societies, and the formation of more study groups is a wise move for the young dentist. A closer liaison between the medical and dental professions has developed, but can become much more closely knit.

Dr. Bourke looks forward to the day when dentists will also have an M.D. degree, will employ R.N.'s, hygienists and technicians directly under him, so that he may better serve the oral health of the community.

D. J. M.

Manitoba

The first meeting of the **Winnipeg Dental Society** for the 1955-56 season was held October 17th, at the Airport Hotel. The executive of the Society for this year consists of:

Past President—Dr. T. J. Cooke

President—Dr. Z. Kasloff

Vice President—Dr. G. Campbell

Clinic Chairman—Dr. W. Grenkow

Secretary-Treas.—Dr. M. J. Averback

Committee—Dr. P. Beattie, Dr. G. Merkeley

The Guest Clinician for this meeting was Dr. W. Branstad of St. Paul, Minnesota. Dr. Branstad, who is on the staff of the University of Minnesota Dental School, travels extensively throughout the United States giving lectures and clinics, and when possible conducts a private practice in St. Paul.

Dr. Branstad chose as his subject "Oral Physiology-Diagnosis and Treatment." He spent the morning discussing the various theoretical factors that must be considered before an adequate diagnosis of any mouth can be made. He emphasized the biologic factors rather than the mechanical factors in the dentist's efforts to create a physiologic articulation which is a tooth arrangement where all the teeth are functioning in harmony with each other and the paths of the jaw motion. He felt that only a proper diagnosis using all available means would show up potential factors of self-destruction in the mouth, and if the dentist conscientiously plays his part as the oral physician, then many of these factors could be determined long before the patient is aware of them. This, he felt, was true preventative dentistry, and if practised would do much to eliminate the idea, held by so many patients and even dentists, that the loss of all the teeth is inevitable.

Dr. Branstad pointed out that there must be an understanding of physiological chewing versus pathological chewing. He went over the biologic factors involved here. The hinge axis, centric relation, condyles path etc., which are anatomically fixed, then the other factors such as the plane of occlusion, form of cusps etc., over which the dentist has some control. He felt that many patients suffering from temporo-mandibular joint troubles, periodontal conditions, and denture troubles can be cured by establishing the true centric and doing whatever is necessary to allow them to close in this position.

A business meeting of the Society was held following lunch. Dr. Kasloff introduced several new members and also welcomed several members of the Dental Corps who are stationed near the city.

In the afternoon Dr. Branstad showed numerous slides of practical cases he had treated and by means of these he re-emphasized all the points he had brought out in the morning lecture. A question and answer period concluded the presentation.

Dr. George Danzinger thanked Dr. Branstad on behalf of the Society and the applause accorded to Dr. Branstad let him know that we appreciated his efforts.

The February meeting of the **Winnipeg Dental Society** was held Thursday the 9th at the Royal Alexander Hotel. The meeting had as clinicians two men from Los Angeles who spoke on "Principles and Application of High Speed Techniques".

Dr. R. C. Huntley and Dr. H. V. Sweet are both on the staff of the Dental College at the University of Southern California and both conduct private practices in suburbs

of Los Angeles. They have given clinics in practically all parts of the United States but this was their first appearance in Western Canada. They didn't think much of our Winnipeg weather and will have some tall tales to tell their families about snow and ice. However, they certainly were subjected to a lot of Western hospitality and that helped to overcome the weather. They were taken to a hockey game and the curling Bonspiel, and as they had never seen either before, their reactions were really something to see.

Drs. Huntley and Sweet alternated on the speaking platform during the day and their material was excellent. They traced the evolution of the high speed methods and told of some of the equipment that is still in the experimental stage. Their dental school has developed a definite technique for preparing different types of cavities utilizing all the advantages of the high speed equipment. They went over this technique step by step, illustrating it with moving pictures and with slides. The main point they emphasized was that with the high speed the heavy cutting on the tooth preparation was done very quickly and this gave the operator that much more time to spend with his finer cutting instruments and hand instruments in order to produce the best possible cavity preparation.

Drs. Huntley and Sweet were held over in Winnipeg for two extra days to give limited attendance clinics to members of the society. These were held in various offices in the city and each man worked before a group of five dentists in the morning and another five in the afternoon. Thus forty Winnipeg dentists got the benefit of being able to watch very closely the high speed technique being performed on patients. These clinicians being teachers as well as capable dentists, were able to bring out many points so that they would be remembered and taken back to our own practices.

Saskatchewan

The annual visit of the President and Secretary of the Canadian Dental Association to the **Saskatoon Dental Society** was again a highlight. The President, Dr. R. R. McIntyre, and Secretary, Dr. Don W. Gullett, presented very interesting and informative addresses on the subject "Canadian Dental Association." They referred at some length to the administration, the financing, the memberships, and the headquarters. They also referred to the Journal, the Health Insurance issue, Dental Research, a retirement income plan, the C.D.A. library and the Dental Surveys.

It is regrettable that all members of the Association cannot avail themselves of the opportunities to hear the president and secretary each year. They always have an inspirational message.

Sincere appreciation is hereby extended to Drs. McIntyre and Gullett for their excellent efforts on our behalf.

L. D. H.

The **Saskatchewan Dental Association** wish to remind all members that the Saskatchewan Dental Convention will be at Waskesiu in Prince Albert National Park from August 30 to September 1st, 1956. You cannot surpass this location for a convention, with all the beauty of the lakes, golfing, fishing, boating, swimming, sunsets and variety of views. Make your plans now to attend this important meeting of our association.

Dr. James R. Jensen of the Minnesota State Dental College has just completed a tour of lectures of our province under the auspices of the Saskatchewan Dental Association. Dr. Jensen is the Associate Professor of Operative Dentistry and lectured on the subject of "Evaluation of Newer Methods of Cavity Preparation". The content and the presentation were excellent and most valuable to all who attended. We are all indebted to Dr. Jensen for his inspirational lectures.

L. D. H.

In Memoriam

Sprott, Robert John — Dr. Robert John Sprott of Barrie, Ontario, passed away on February 12, 1956.

Born in Osprey Township, Dr. Sprott received his primary education in Osprey and secondary school education in collegiates at

Collingwood and Barrie. After matriculation he took up the study of dentistry and graduated from the Royal College of Dental Surgeons in 1900.

Soon after he opened practice in Barrie. Through the years he was much interested

in the development of the dental profession and served as director and president of both the Simcoe County Dental Association and the Ontario Dental Association. On his retirement in 1949 he had completed almost 50 years in active practice.

Dr. Sprott always was deeply interested in civic and community affairs. He spent several years as an alderman in town council, later deputy reeve and as a member of Simcoe County Council, and then was mayor of Barrie in 1918-1920.

Later he became a member of the Board of Education on which he served for 15 years, two years as chairman.

Dr. Sprott had a most distinguished career in Masonry. He joined Kerr Lodge, from which he received a 50-year jewel last year, filled the various chairs and became Worshipful Master in 1910-11. For 35 years he had installed the incoming officers of Kerr Lodge. He was District Deputy Grand Master of Georgian District in 1914. He was a member of Signet Chapter, Royal Arch Masons, and after passing through the chairs, was elected Excellent Z. Later he served as Grand District Superintendent for Georgian District.

In Scottish Rite Masonry Dr. Sprott was also quite active. His terms of office took him through to become Thrice Puissant Grand Master of Barrie Lodge of Perfection and Most Wise Sovereign of Spry Chapter, Rose Croix. He was a member of Moore Consistory, Hamilton, and finally achieved the great distinction of being elected an honorary member, 33°, of the Supreme Council of Canada.

He was a member all during his residence in Barrie of Trinity Church, in which he filled various positions, including lay representative to Synod in Toronto.

Dr. Sprott is survived by his wife, the former Emma Bingham of Barrie, a son, Harold G. of Ottawa and a daughter, Mabel of Montreal.

Wurtz, Wilmot Benton — Dr. Wilmot Benton Wurtz of Toronto passed away on February 22, 1956. He was 73.

Born in Green River, Ontario, Dr. Wurtz was an 1908 graduate of the Royal College of Dental Surgeons of Ontario. For many years he practised on Bloor street in Toronto but in 1952 ill health forced him to retire. Dr. Wurtz was an ardent golfer.

Dr. Wurtz is survived by his wife, the former Hattie May Noble and his son, Gordon, of Montreal.

Rice, Lawrence Granville — Dr. Lawrence Granville Rice of Golden, B.C., died suddenly on February 21, 1956 at the age of 57.

Born in Toronto, Ontario, he attended King George High School in Vancouver and in 1922 graduated from North Pacific College, Oregon. For several years he practised in Vancouver and in later years in Mission, Queen Charlotte Islands and lastly in Golden, B.C., where after one month's practice he suffered a fatal heart attack.

He leaves two sons, Larry of Detroit and Ronald of Vancouver, one daughter, Mrs. W. E. Donnelly of Vancouver, and three grandchildren.

Bechely, Francis Joseph — Dr. Francis Joseph Bechely of Seaforth, Ontario, passed away on March 2, 1956. He was 61.

Born in Hamilton, Dr. Bechely received his early education in St. Thomas and graduated from the Royal College of Dental Surgeons of Ontario in 1916. Dr. Bechely then set up his practice in Seaforth.

In World War I he served as a captain with the Canadian Dental Corps. He was a past president of Seaforth Lions Club, a member of Seaforth branch Canadian Legion, of the bowling and curling clubs, and was chairman of the fund for crippled children.

Dr. Bechely was most interested in children's dentistry and did examinations in the schools at Seaforth. He was a past-president of the Huron Dental Society and had at one time been its secretary.

Surviving Dr. Becheley are his wife, the former Beth Willis, a son, Michael, and one daughter, Mrs. W. H. Arthur of Miami.

Schumacher, Leo — Dr. Leo Schumacher of Toronto passed away on February 10, 1956. He was 65.

Born in Chesley, Ontario, Dr. Schumacher attended school in Walkerton and in Saskatoon, Sask. As a young man he taught school in Humbolt, Sask., for ten years before returning east to attend the school of dentistry at the University of Toronto, where he graduated in 1923.

A resident of the Kingsway, Dr. Schumacher was a member of the Academy of Dentistry, a charter member of the Knights of Columbus branch at Our Lady of Sorrows church, a member of the Holy Name Society and the Catholic Order of Foresters.

Surviving are his widow, the former Elaine Cottrell, a daughter, Mrs. M. Carrier of Montreal, and two sons, Albert of Toronto and Edwin, a dental student of Langley Prairie, B.C.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1956	Banff, Alberta	June 3rd-6th
1957	Winnipeg, Manitoba	June 23rd-26th

FUTURE EVENTS

Date	Function	Location	Officer	Address
May 1	Vancouver District Dental Society Annual Meeting	Vancouver	Dr. J. H. Merrell	217 Medical-Dental Bldg., Vancouver 1, B.C.
May 13-16	O.D.A. Convention	Toronto	Mrs. R. E. Booker	234 St. George St. Toronto Ont.
May 14	2T6 Reunion Dinner 6:30 p.m.	Toronto	Dr. Anthony Vince	646 Danforth Ave. Toronto Ont.
May 14	3T1 Twenty-fifth Reunion	Toronto	Dr. R. E. Martin	1466 Bathurst St. Toronto 10, Ont.
May 17	Vancouver District Dental Society's Spring Golf Tournament	Vancouver	Dr. J. H. Merrell	217 Medical-Dental Bldg., Vancouver 1, B.C.
May 17-19	B.C. Dental Assoc. Convention	Vancouver	Dr. K. R. McWilliams	217 Medical-Dental Bldg., Vancouver, B.C.
June 17-21	Berkshire Conference in Oral Pathology & Periodontology	Lennox, Mass.	Tufts University School of Dental Medicine	136 Harrison Ave., Boston 11, Mass.
June 21-24	American Academy of Dental Medicine Meeting	Detroit	Dr. G. J. Witkin	45 South Broadway, Yonkers 2, N.Y.
June 22	West Toronto Dental Society Golf & Dinner	Islington	Dr. J. R. Glenney	3242 Bloor St. W., Toronto, Ont.
June 27, 28 & 29	Maritime Dental Assoc. Convention	Halifax	Dr. E. F. Dexter	5 Dutch Village Rd., Halifax N.S.
Aug 30-Sept. 1	Saskatchewan Dental Assoc. Convention	Waskesiu	Dr. G. H. Janzen	11 Knox Block, Prince Albert, Sask.
Oct. 17, 18 & 19	Montreal Dental Club Annual Fall Clinic	Montreal	Dr. Bruce Ward	1414 Drummond St. Montreal, P.Q.
Sept. 7-14 1957	Congrès de la Fédération Dentaire Internationale	Rome, Italy	G. H. Leatherman	Secretary, London, England.

The class of 3T6 is planning its twentieth year reunion party to take place during the O.D.A. Convention this May 13-16 at the Royal York Hotel. For further information contact Dr. Meredith Twible, 2 Bloor St. East, Toronto, Ontario.

The class of 1T6 will hold a reunion to celebrate the fortieth anniversary of graduation during the O.D.A. Convention May 13-16 at the Royal York Hotel. For further information contact Dr. E. G. Berry, 2 Clarendon Ave., Toronto 5, Ontario.

SHORT GRADUATE COURSES

Date	Course	Location	Address
June 4-8	Full Denture Prosthesis	Tufts School of Dental Medicine	Dr. Irving Glickman, Director Division of Post-Graduate Studies, 136 Harrison Ave., Boston, Mass.
June 11-15	Occlusal Equilibration	New York University	Secretary, Postgraduate Division, New York University College of Dentistry, 209 East 23rd St. New York 10, N.Y.
June 25-29	Workshop in Practice Management	New York University	Director, Postgraduate Division, New York University, 209 East 23rd St. New York, N.Y.

Dr. Louis I. Grossman using closed T.V. Circuit to give post-graduate courses in Endodontics in Montreal

The Montreal Endodontia Society in co-operation with the Faculty of Dentistry of McGill will present at the new Montreal General Hospital on Monday, May 14, a one day post-graduate course in Endodontics. Dr. Louis I. Grossman of the University of Penn., will be guest lecturer. The program has been planned to interest the general practitioner and the specialist and will be presented over a Closed Circuit T.V. system made possible through the courtesy of R.C.A. Victor.

Enquiries may be directed to: Dr. E. S. Dorion, 710 D Sun Life Bldg., Montreal.



DE L'ASSOCIATION DENTAIRE CANADIENNE

Les dentistes ont-ils failli à leur tâche?*

La carie dentaire: un problème d'hygiène publique

par CLARENCE BOUILLON, D.D.S., M.P.H., surintendant de la Division de l'Hygiène dentaire, Service de Santé, Montréal

Le thème de cette causerie peut vous sembler peut-être quelque peu paradoxal; en effet parler de la carie dentaire à un groupe de dentistes, dont l'expérience professionnelle ne peut être ignorée, ressemble un peu à un individu qui parlerait de la physiologie du coeur à un groupe de cardiologues. Soyez assurés, toutefois, que ce n'est pas mon intention de développer une synthèse sur la carie dentaire; son étiologie, les facteurs qui la produisent ou du moins la favorisent vous sont aussi familiers qu'à moi-même.

La formule que je chercherai à développer considérera plutôt ses effets et le problème qu'elle crée lorsqu'on l'envisage au point de vue santé publique.

Notre profession est jeune; évidemment si nous remontons ses origines jusqu'à Pierre Fauchard, le Père de la Dentisterie (1678-1761), son histoire serait bien

longue; mais si nous l'identifions à partir du moment où la santé dentaire fut reconnue comme un facteur important de bien-être physique, sa reconnaissance ne daterait que du 3 octobre 1910, alors que William Hunter, un médecin anglais, lors d'une conférence à un groupe de médecins de l'Université McGill, démontra que l'anémie, les colites, l'arthrite, les affections du rein ainsi que nombre d'autres maladies pouvaient être causées par un foyer d'infection d'origine dentaire. C'est aussi au cours de ces années que l'importance du rôle que joue l'alimentation en regard de la santé dentaire se précisa.

Antérieurement, en 1896 plus exactement, Léon Williams émit son fameux slogan "A clean tooth never decays". Ce slogan, qui d'ailleurs n'est pas admis aujourd'hui, a reçu dans le temps beaucoup de publicité, mais les seuls qui en ont réellement bénéficié furent naturellement les manufacturiers de pâtes et de brosses à dents.

* Cette conférence a été prononcée devant la Société dentaire de Montréal, à l'Université de Montréal, le 21 février 1956.

Oui, en effet, nous sommes une jeune profession aux prises avec le défaut physique le plus généralisé et peut-être le plus ancien.

La carie dentaire affecte l'individu très tôt dans la vie. A 3 ans déjà, 80% en sont atteints. Ce pourcentage augmente graduellement jusqu'à cinq ans, alors que 98.6% en sont victimes. Le chiffre de dents cariées à sept ans est de 6 approximativement. Il y a, à partir de ce moment, un déclin rapide de la carie des dents temporaires à cause de leur perte prématurée ou de leur exfoliation normale, jusqu'à l'âge de douze ans. A cet âge, généralement, la denture temporaire a fait place à la denture permanente. Il ne reste qu'à faire l'évaluation des dégâts provoqués par la perte prématurée des premières dents de l'enfant.

Avec l'éruption des dents permanentes, vers l'âge de six ans, la nature lui fournit une autre occasion de se constituer une denture saine et forte; mais simultanément la carie recommence et, avec la négligence qui caractérise nos habitudes modernes d'hygiène buccale et d'alimentation, progresse rapidement jusqu'à l'âge de 15 ans, alors que le taux a atteint généralement son maximum. Le nombre de dents permanentes cariées à cet âge se chiffre environ à sept. A partir de ce moment, c'est la débâcle, si l'enfant n'a pas bénéficié de traitements adéquats.

A cause de l'extraction qui commence à s'imposer, le taux de dents et de surfaces cariées diminue graduellement.

Avec le taux d'extraction qui augmente, la fabrication et l'ajustement de pièces de prothèse deviennent le besoin prédominant; soit par négligence ou manque de soins, à peine les premières molaires permanentes ont-elles fait leur apparition qu'elles se carient et doivent être extraites; il en résulte qu'à vingt ans approximativement 20%, soit une personne sur cinq, ont besoin d'un pont fixe ou amovible. A 25 ans, cette moyenne est de 30% environ, ou d'une personne sur trois. Jusqu'à l'âge de 40 ans, elle demeure plutôt stationnaire. Après cet âge, elle

n'est pas maintenue et décline graduellement.

On peut se demander toutefois comment il se fait que le nombre de personnes de vingt à quarante ans qui ont besoin de ponts diminue plutôt rapidement par la suite; c'est que la perte progressive des dents à partir de ce moment, perte provoquée par la carie ou peut-être plus souvent par un état pathologique des tissus mous, rend l'adaptation d'un pont impossible; et nous devons avoir recours à la prothèse partielle d'abord, qui doit faire place à brève échéance à la prothèse complète.

A quarante ans, environ 30% de la population a besoin d'un pont pour restaurer la fonction physiologique normale des dents; un autre 30% nécessite la prothèse. Une fois le cap de la quarantaine dépassé, et à cause de l'augmentation du taux de l'extraction, nous arrivons bien vite au cycle que nous pouvons appeler celui des "dentiers".

La relation entre les différents cycles que nous venons de décrire représente l'aspect général du problème de la carie dentaire chez nous. Evidemment les courbes qui les identifient peuvent être fortement influencées par divers facteurs tels que l'hygiène buccale, le milieu familial, le facteur économique, le traitement en bas âge, l'examen périodique et, non le moindre, les traitements adéquats.

Ces cycles représentent l'évolution de la carie à trois périodes bien distinctes de la vie: l'enfance, l'adolescence et l'âge adulte. L'intensité cependant du problème à chaque période reflète la nature et l'efficacité des traitements que l'individu aura reçus au cours de la période précédente. Il faut donc conclure que le seul moyen d'influencer favorablement les courbes successives qui reflètent le problème est d'assurer les soins dentaires dès la période de l'enfance.

Le problème de la distribution des soins dentaires nécessaires est un des plus complexes dans le domaine de la santé publique aujourd'hui.

Il y a longtemps que la profession réalise qu'une fraction seulement de la

population reçoit les soins dentaires dont elle a besoin. Les statistiques nous démontrent qu'il y a approximativement 4 caries nouvelles pour chaque dent obturée.

Il est évident par ailleurs qu'avec le nombre de dentistes actuellement disponible, il serait impossible de satisfaire la demande, si tous se faisaient traiter.

Avant de considérer toutefois la solution au moins partielle du problème, par l'application des méthodes classiques de contrôle, il serait juste de faire le bilan des besoins et la relation de ces besoins en regard de la demande.

Ceux qui sont particulièrement intéressés au problème de la carie dentaire l'ont envisagé en regard des besoins et du coût des services; mais lorsqu'ils ont envisagé le problème si important de la demande pour soins dentaires, ils ont réalisé très tôt qu'il était de beaucoup plus sérieux qu'on ne le croyait. La principale raison est que les quelques recherches qui ont été faites en ce sens n'ont aucune valeur statistique; la demande pour des soins dentaires demeure donc toujours discutable.

Cependant, si vous me le permettez, je vais chercher à décrire quelques-uns des facteurs concernant la demande du public pour des soins dentaires et l'interrelation qui existe entre ces mêmes facteurs, plutôt que de chercher à déterminer la demande réelle pour ces mêmes services.

Il existe trois aspects très importants qu'il faut considérer:

- 1o les besoins de traitement
- 2o la demande potentielle de traitements
- 3o la demande effective de traitements.

Il est évident que les besoins de traitements concernent la presque totalité de la population. Nous devons faire cependant une distinction entre la demande potentielle et la demande effective.

La demande potentielle provient de cet élément de la population qui désirerait des soins dentaires, mais dont la situation économique ne lui permet pas de se les procurer. La demande effective provient de l'individu qui reçoit les traitements nécessaires parce qu'il le désire et que sa situation financière le lui permet.

L'interrelation entre ces trois facteurs bien définis forme en quelque sorte ce que nous considérons comme l'ensemble des besoins. Si nous supposons que ceux qui ont besoin de soins dentaires et qui n'en font pas la demande représentent 50% de la population, que la demande effective représente 10%, il reste néanmoins la demande potentielle ou 40% de la population qui désirerait bien recevoir les traitements dentaires nécessaires, mais dont le facteur économique les empêche de se les procurer.

Ceci représente un aspect du problème.

Dans un autre ordre d'idées, lorsque nous parlons de la carie dentaire, nous parlons généralement en termes de prévalence ou de prédominance, lorsqu'en réalité il est nécessaire, si nous voulons solutionner le problème, de chercher plutôt à réduire l'incidence ou l'accumulation des défauts. C'est en tenant compte de ces deux aspects différents du problème et surtout en regard du nombre de dentistes disponibles que l'importance des cliniques dentaires pour supporter un programme d'éducation devient évidente. Nous pouvons déduire aussi que d'année en année, au rythme où se fera l'éducation de la population, la demande potentielle de services augmentera dans une proportion identique avec la demande effective, soit dans une proportion de 4 contre 1; jusqu'au moment où l'éducation ayant fait son oeuvre, il n'existera plus que la demande effective et la demande potentielle.

En marge d'un problème d'une aussi grande envergure, la profession serait bien à court de moyens s'il fallait que demain la population exige des traitements adéquats. Pour appuyer cette assertion, permettez-moi de vous fournir quelques chiffres provenant des statistiques du département de santé publique de la ville de New York.

A 6 ans et 7 ans, un enfant a en moyenne sept dents cariées. De 12 ans à 14 ans, la moyenne est de 12 dents cariées. Quinze pour cent de tous les dentistes des Etats-Unis exercent leur profession à New York. Il faudrait donc 3,000,000 d'heures de travail (Dentist Hours) à raison de $\frac{1}{2}$

heure par patient pour traiter les 905,000 enfants de cette ville, ce qui serait impossible. Si l'on considère que ceci ne tient pas compte des besoins de l'adulte, ni de l'accumulation de nouvelles caries, mais seulement des caries déjà existantes, l'on a vite fait de réaliser la futilité de chercher à solutionner le problème en augmentant le nombre de dentistes pratiquants. Nous avons approximativement 6000 dentistes au pays; soit environ un dentiste par 2500 de population. Le nombre de dentistes en pratique active est nettement insuffisant; si tous recevaient les soins dentaires dont ils ont besoin, il faudrait que leur nombre soit quadruplé.

La mort et la retraite laissent des vides que nos facultés dentaires ont peine à combler. La civilisation moderne avec ses exigences, ses habitudes alimentaires, tout à fait opposées aux principes fondamentaux d'une alimentation rationnelle, crée une situation que les possibilités budgétaires de nos programmes d'hygiène publique ne parviennent pas à corriger. C'est la seule défectuosité physique dont l'absence est en quelque sorte une déviation de la normale. C'est un problème économique dont l'étendue peut être mesurée par les chiffres suivants. Les Canadiens dépensent annuellement \$48,000,000. (chiffres pour 1953) — \$73,000,000. (1954) pour soins dentaires et cela pour satisfaire à peine le quart des besoins réels. Aux Etats-Unis, au cours de la même année, les traitements dentaires ont coûté aux Américains la somme fabuleuse de \$1,600,000,000; et ce nest qu'une fraction seulement du montant qui serait nécessaire pour que tous puissent recevoir des services adéquats.

Lors de la deuxième guerre mondiale, encore aux Etats-Unis, 21% des 2,000,000 de recrues appelées à servir dans les forces armées furent refusées parce qu'elles ne rencontraient pas les exigences minima requises. Ce minimum consistait dans la présence de 12 dents antagonistes en bon état, soit 6 dents supérieures et 6 dents inférieures. On a dû par la suite

baisser ce minimum et se montrer moins exigeant.

C'est un problème social, c'est aussi un problème économique.

En plus du nombre trop restreint de dentistes, il y a certains autres facteurs qui contribuent à rendre le problème encore plus complexe; parmi ceux-ci sont la durée et le coût des traitements. Comme je l'ai mentionné plus haut, on a tort de croire que c'est en corrigeant l'accumulation de caries que nous pourrions enrayer le problème. Certes, l'individu traité en bénéficie totalement, mais à cause de l'ampleur des besoins et du petit nombre de dentistes disponibles, pour chaque patient dont la bouche a été complètement restaurée, quatre autres individus sont négligés et tombent dans le groupe des porteurs de dentiers . . . et le problème demeure toujours le même. Je vais préciser.

Si tous les dentistes de la Métropole décidaient de se consacrer au problème de l'accumulation de la carie, ils n'y parviendraient jamais, car le taux est trop élevé, et ils ne sont pas suffisamment nombreux; ce taux varie entre 3.5 et 5 dents cariées par individu, l'âge étant le facteur qui l'influence; il va sans dire aussi qu'il n'aurait pas de temps disponible pour la fabrication de ponts ou de pièces de prothèse.

Par ailleurs, si tous conjuguait les efforts vers le contrôle de l'incidence de la carie dont le taux est beaucoup plus bas, soit de 1 à 1.5 caries nouvelles par année, par les méthodes préventives à notre disposition, telles le traitement en bas âge, l'examen périodique, l'éducation des parents et de l'enfant, l'odontologie prophylactique, les applications topiques de NaF1, la pose d'appareils de maintien, il y aurait une diminution considérable du taux des patients porteurs de dentier à 40 ans au cours des générations futures.

Nous pouvons supposer aussi que la pratique illégale deviendrait un problème, non pour le dentiste, mais pour le technicien.

Un autre facteur très important qui influence l'aspect économique du problème

de la carie dentaire, est le coût des traitements. Il faut bien admettre que parfois un budget familial peut être bien grevé par des soins dentaires adéquats; le seul moyen de contourner ce facteur très important est par les méthodes préventives précitées; mais la condition sine qua non d'une telle mesure est de favoriser par tous les moyens possibles l'éducation de la population; c'est la raison pourquoi d'ailleurs l'hygiène dentaire est devenue peu à peu une activité très importante dans tout programme de santé publique.

Cette activité, comme toute activité qui a pour but le maintien de la santé générale des populations, est basée sur l'éducation. En effet, elle est l'essence même de tous nos programmes d'hygiène publique. Toute éducation, quelle qu'elle soit, en autant qu'elle est positive, est suivie de progrès et d'amélioration. Son action est cumulative dans le sens qu'il n'y a pas régression. L'enfant qui naît, se développe, perçoit et différencie les personnes, les objets, apprend à manger avec sa cuillère, dit papa, maman, ne fait que réagir inconsciemment à l'influence de son milieu. En appliquant le même principe à l'éducation en hygiène publique, nous atteignons nécessairement une progression ascendante dans la manière de concevoir de l'individu. Seules, les formules sont changées.

L'éducation est tout un programme par elle-même en hygiène dentaire publique. On peut le comparer à une structure triangulaire dont les trois plans sont: la recherche, le service et l'éducation. Faites disparaître un des plans et la structure s'écroule. Si la recherche n'a pas enrichi nos connaissances suffisamment pour nous permettre de répondre clairement aux questions qui nous sont posées, le but au point de vue éducatif ne peut être atteint. Si la facilité nécessaire à mettre en pratique les conseils et les recommandations reçus n'existe pas, il y a danger que la personne se sente frustrée et développe une attitude d'indifférence devant ce qui lui semble être une impossibilité. Par contre, si les services dentaires sont donnés sans être accompagnés d'un pro-

gramme éducatif, le bien-être de l'individu laissé à lui-même n'en bénéficiera pas, car il ne saura apprécier la juste valeur de ces mêmes services. Les préscolaires seront négligés, les enfants d'âge scolaire continueront à craindre le dentiste, les parents continueront à être guidés par des gens plus ou moins bien renseignés.

Education, prévention et correction: voilà donc les armes à la disposition des services d'hygiène dentaire publique.

Créer chez l'enfant une attitude favorable en ce qui concerne les soins qu'il doit apporter à sa bouche; promouvoir la santé dentaire de l'enfant, lui apprendre et lui en inculquer le désir de prendre soin de lui-même. Voilà quelques-uns des objectifs du service que j'ai l'honneur de diriger. Nous préparons en quelque sorte aujourd'hui le patient avisé du dentiste de demain. Et j'appuie sur le fait que ce programme s'exécute en étroite collaboration avec les parents, le médecin et l'infirmière de l'école, et le titulaire de la classe.

Le but de cette causerie n'est pas d'entrer dans les détails du programme d'hygiène dentaire municipal. Il me suffit de vous en avoir exposé quelques-uns des objectifs, pour que vous réalisiez quelles sont les méthodes de contrôle que nous devons exercer pour les atteindre.

Les cliniques dentaires municipales ne sont pas des dispensaires, et les enfants qui sont admis au programme des cliniques sont soumis à certaines conditions bien spécifiques; quelques-unes de ces conditions sont: le consentement des parents par lequel ils s'engagent à ce que l'enfant reçoive les traitements jugés opportuns par le dentiste, la nécessité de l'hygiène buccale à domicile, l'exactitude aux rendez-vous. Lorsqu'un enfant est accepté pour traitement, tout est fait afin qu'il poursuive ses traitements jusqu'au bout.

En 1955, nous avons restauré au complet la bouche de 5783 enfants. Ce nombre est infime cependant, si nous considérons qu'il y a à Montréal plus de 150,000 enfants d'âge scolaire; si nous y ajoutons les préscolaires, nous en comptons au delà de 200,000. Il y a approximativement

15,000 enfants examinés par année dans les cliniques dentaires; un certain nombre bénéficie d'un traitement d'urgence, d'une prophylaxie; d'autres, le petit nombre, sont normaux et bénéficient de l'enseignement qui y est donné.

Il ne peut pas, et il ne doit pas y avoir de budget pour rencontrer tous les besoins existants. D'ailleurs, même si les budgets personnels, gouvernementaux ou autres étaient illimités, il n'y aurait pas suffisamment de dentistes pour répondre à la demande.

Le problème serait considérablement réduit cependant, si chaque membre de la profession suivait la formule et les méthodes de contrôle employées dans les services d'hygiène dentaire publique.

Le praticien

En somme, le succès du praticien aussi bien que le succès d'un programme d'hygiène dentaire, repose entièrement sur la conception du patient et de la valeur des services qui lui sont rendus. Si la formation de celui-ci est telle qu'il réalise que la santé buccale est un facteur important à son bien-être et à sa santé générale, il sera nécessairement intéressé à la conserver. Pour le praticien, l'éducation du patient qui est sous ses soins est tout aussi importante que les services professionnels qu'il peut lui rendre; car si la valeur de ses services n'est pas reconnue et appréciée, comment peut-il s'attendre à une coopération complète de la part de celui-ci?

Pourtant, le dentiste dans son bureau est particulièrement favorisé pour pouvoir contribuer à l'éducation du patient. En effet, il est seul avec lui, et c'est précisément au sujet de la santé de ses dents qu'il est venu le consulter. Que faut-il de plus pour capter sa confiance? Sa seule présence sur la chaise favorise son éducation et présente des avantages qui n'existent pas lors d'une rencontre fortuite, soit sur la rue ou à la maison. Le patient est là avec un problème. Il veut être soulagé, car bien souvent il souffre; toujours il est inquiet. Seul le dentiste peut l'aider et il le sait. Pour le moment, il ne songe pas à

autre chose et précisément parce qu'il est inquiet, il est prêt à prendre conseil. Bien sûr, la seule vue de la chaise et des instruments l'effraie, mais il sait que seul le dentiste peut solutionner son problème, et en lui il est prêt à mettre toute sa confiance.

Dans une telle situation, tout ce que fait ou dit celui-ci est d'une importance extrême. Si le dentiste est brusque ou indifférent, la réaction mentale ou émotive du patient se manifesterait en conséquence, car le dentiste est devenu en quelque sorte le point de mire et l'objet d'une critique analytique du patient qu'il doit traiter.

Il devient donc nécessaire de créer chez ce patient l'impression favorable nécessaire pour l'adoption d'une attitude positive en regard des conseils qui lui seront données. Trop souvent, le dentiste croit avoir fait tout ce qui est nécessaire s'il a donné à son patient un certain nombre de services apparemment adéquats. Mais il ne réalise peut-être pas toutefois que ces mêmes services n'ont peut-être qu'une valeur négative. En effet, le patient peut-il être satisfait et maintenir sa confiance envers son dentiste, si ce dernier a créé chez lui l'impression qu'il est plus intéressé dans le montant des honoraires qui lui sont versés qu'à son bien-être? Il lui arrivera peut-être de tirer la conclusion, bien logique d'ailleurs dans les circonstances, que le dentiste n'est après tout qu'un technicien spécialisé dont les aptitudes sont limitées aux exigences de sa technique. Il le comparera peut-être à son médecin de famille qui lui donne les conseils nécessaires pour le bon maintien de la santé. Lorsque le patient déduit ainsi à la suite de ses propres observations, comment pouvons-nous espérer conserver le niveau de notre valeur professionnelle sur le piédestal d'intégrité où nous voulons pourtant la maintenir? La profession compte sur chacun de ses membres pour assurer le niveau culturel et la reconnaissance de la population qu'il sert et de qui elle dépend. Chacune des unités est responsable vis-à-vis celle-ci, ainsi qu'à chaque individu qui se commet à ses soins.

J'ai dit, il y a quelques années, et je cite de nouveau: "Si tous les dentistes étaient devenus des éducateurs, il y a 25 ans, nous ne serions pas aux prises avec tous les problèmes que nous envisageons aujourd'hui, entr'autres celui de la pratique illégale". Il est ironique de constater que nous luttons fiévreusement pour pouvoir remplacer, dans les limites de la loi, ce que, par conscience professionnelle, il était de notre devoir de conserver. Je m'empresse toutefois d'ajouter que je sais que je ne m'adresse pas à ceux que je vise plus particulièrement. Le groupe dont vous êtes, qui forme les cadres de nos associations professionnelles, se recrute parmi les membres les plus dignes de la profession dentaire.

C'est donc un milieu favorable pour déterminer ce que, comme individu et comme groupe, nous pouvons faire pour améliorer la santé dentaire de la population.

Je comprends très mal la spécialité de pédontie, non pas que je n'admire pas celui qui s'y dirige, mais pourquoi y est-il attiré, si ce n'est parce que la majorité ou du moins un trop grand nombre ne veulent pas traiter les enfants et s'ils les traitent, ils le font mal.

Quand nous savons que la solution du problème de la carie réside dans l'examen et le traitement très tôt dans la vie, nous n'avons pas le droit de refuser nos soins professionnels à celui qui les requiert. Non, mes amis, l'enfant n'est pas l'exclusivité du pédodontiste: il est et doit rester le patient de chacun de nous, qui que nous soyons. Où en serions-nous avec la santé publique s'il fallait que disparaisse la pratique de la médecine générale.

Je comprends et admetts qu'il peut exister des exceptions à la règle générale; il en existe toujours. Je comprends aussi qu'un dentiste a droit à une juste rémunération pour services rendus, mais je comprends moins bien qu'à services égaux et honoraires égaux on persiste à accepter l'adulte de préférence à l'enfant; et que bien souvent, si on l'accepte, on le traite d'une façon inadéquate.

L'importance de l'éducation du patient

dans le cabinet, de l'examen périodique et du traitement en bas âge, est admise comme principe de base pour le contrôle de la carie. Des dents temporaires qui évoluent normalement sont encore les meilleurs appareils de maintien qui soient; mais leur évolution normale ne peut être assurée que par chacun de nous.

L'éducation du patient demeure cependant l'arme par excellence qui nous permettra de rencontrer d'une façon plus adéquate les besoins existants; car elle favorisera la participation active du patient et développera chez lui une attitude positive en tout ce qui concerne la santé des dents. Il développera des habitudes saines, ce qui affectera favorablement le taux habituel de l'incidence de la carie.

L'application topique de fluorure de sodium à 2% et l'odontonomie prophylactique sont d'autres techniques qui aident considérablement à prévenir la perte prématurée des dents.

Il est permis de douter toutefois de la possibilité d'une solution du problème de la carie dentaire par l'application des seules méthodes dont nous disposons; car au rythme de l'incidence, je le répète, le nombre de dentistes en pratique active est nettement insuffisant. C'est en regard de cette dernière considération qu'on peut entrevoir l'importance de la fluoration comme mesure de santé publique.

La base sur laquelle repose le succès de tout programme d'hygiène publique est la prévention: la thyphoïde a disparu grâce à la chloration et à la pasteurisation; grâce au programme d'iode, il n'existe à peu près plus de goître. Avec la vaccination et l'immunisation, la variole et la diphtérie ne sont plus des problèmes d'hygiène publique. Aujourd'hui, c'est la fluoruration qui, grâce à son efficacité reconnue et à sa facilité d'application, se révèle comme la plus grande mesure d'hygiène publique du dernier quart de siècle, sinon du siècle même, abstraction faite peut-être du vaccin Salk dont l'efficacité a été statistiquement démontrée. Je ne veux pas faire une révision de l'hypothèse fluor-carie dentaire, ni traiter du fluor comme élément, car une

telle étude prolongerait une causerie qui est déjà peut-être trop longue. Je mentionne cependant certains points qui méritent d'être soulignés.

Les études progressives à Grand Rapids, Mich., Newburgh, N.Y. et Brantford, Ont., qui ont débuté en 1945 et qui devaient se poursuivre pendant une période de dix ans, sont maintenant terminées. Les résultats ont démontré que la fluoruration abaissait le taux de l'incidence de la carie de 55% à 65%; et que ces résultats étaient uniformes dans les trois municipalités soumises à l'étude. L'examen médical et radiologique n'a révélé aucun effet nocif qui aurait pu être imputable à l'addition de fluorure de sodium dans l'eau de consommation. C'était les deux points qu'il fallait démontrer, et ceci a été fait de façon spectaculaire.

De tels résultats nous laissent entrevoir l'influence très grande qu'aura la fluoruration sur l'orientation de nos programmes d'hygiène dentaire publique et sur la possibilité de contrôler la carie. Les constatations qui découlent des études progressives, qui viennent de se terminer, nous permettent d'espérer les résultats suivants:

- 1o Il y aura six fois plus d'enfants qui n'auront pas de carie dentaire;
- 2o On pourra s'attendre à une réduction moyenne de 60% du taux de l'incidence;
- 3o La perte de la première molaire permanente sera diminuée dans l'ordre de 75%;
- 4o Il y aura 90% moins de caries sur les incisives supérieures.

Il est facile de concevoir que nos méthodes de contrôle actuelles seront grandement influencées par la fluoruration des eaux de consommation.

L'éducation, qui est à la base de tous nos programmes d'hygiène, est d'autant plus facile et efficace que les résultats sont possibles. Un problème, dont les proportions atteignent la totalité de la population et où les besoins ne peuvent être rencontrés par les services actuellement disponibles, est par le fait même insoluble; et parce que l'individu n'associe

pas la carie dentaire avec la maladie ou la mort, le programme d'éducation est entravé. Si cependant, par la fluoruration, la carie dentaire est réduite des deux-tiers, l'éducation sera d'autant plus facile à faire que l'individu lui-même adoptera une attitude positive en face d'un problème aux proportions limitées.

C'est cependant par son aspect préventif que la fluoruration influencera nos programmes d'hygiène dentaire et le problème général de la carie dentaire.

Nous envisageons aujourd'hui la situation où il est impossible de donner à chacun, même partiellement, les services dentaires dont il a besoin. Si, toutefois, il devient possible de diminuer des deux-tiers l'accumulation de nouvelles caries, nous pouvons entrevoir pour la génération prochaine le plein complément de services disponibles en regard de la demande potentielle de soins dentaires nécessaires.

Par l'éducation, et parce que la fluoruration aura réglé des deux-tiers le problème de la carie dentaire, un équilibre s'établira entre la demande de traitements et les services disponibles; et si l'incidence de la carie, quoiqu'à taux réduit, existe toujours, nous n'aurons plus à déplorer l'extraction prématurée des dents qui résulte du manque de traitements précoces nécessaires. La correction aussi sera simplifiée parce qu'il a été démontré que dans les endroits où l'eau est naturellement fluorée, il n'existe pas de carie profonde, ni très étendue; les surfaces les plus susceptibles à la carie semblent être les surfaces occlusales des molaires et des bicuspides.

La carie sur les surfaces proximales des incisives est exceptionnelle. Il y aura aussi possibilité, avec un nombre identique de services disponibles, de traiter trois fois plus de patients puisque chacun aura trois fois moins de caries. Enfin viendra le temps où même ceux qui n'auront pas recours aux soins du dentiste en bénéficieront. Nous avons donc enfin toutes les raisons d'espérer que ce qui encore hier semblait irréalisable, tombe enfin dans le domaine de possibilités: un contrôle effectif de la carie dentaire.

Je voudrais ici rendre hommage à nos groupements professionnels qui ont un rôle bien défini: celui de sauvegarder l'intégrité professionnelle de leurs membres, en leur permettant de se familiariser avec les nouvelles techniques de la science dentaire moderne. Je ne puis avoir que de l'admiration pour les confrères qui se dépensent depuis des années à la direction de nos sociétés dentaires, particulièrement ceux de la Société dentaire de Montréal, que je connais et dont je suis membre; la profession lui doit beaucoup!

Il est évident cependant que les dirigeants de nos associations scientifiques ne peuvent tout faire seuls; chaque membre de la profession se doit d'y apporter sa collaboration, non seulement en assistant aux réunions mensuelles et aux congrès, mais aussi et surtout en s'intéressant à l'orientation de ses programmes et de son enseignement; et en gardant toujours à l'esprit ce qui doit être l'objectif premier de nos sociétés professionnelles: l'amélioration de la santé dentaire de l'individu par l'application de méthodes et de traitements appropriés.

Notre profession est jeune, elle est belle et noble; et parce qu'elle est jeune, ses membres n'ont pas tous pu bénéficier de la formation nécessaire pour l'application adéquate et méthodique de cette science nouvelle qu'est la dentisterie préventive. C'est là je crois que réside la grande responsabilité de nos associations.

Je ne suis pas sous l'impression que nous avons, comme profession, la confiance que nous devrions avoir du public; la preuve c'est que 50% de la population ne voit le dentiste qu'en cas d'urgence seulement, et, de plus, cette urgence doit être accompagnée parfois de douleur insupportable pour que l'individu se décide au traitement: généralement l'extraction. A peine 10% visitent le dentiste régulièrement, comme mesure de prévention. A cinquante ans, 60% des adultes sont édentés. Ceci indique clairement, soit que la population considère que les dents ne sont pas importantes comme facteur de santé: donc, un manque d'éducation dont nous sommes nous-mêmes les grands res-

pensables; soit que les règles élémentaires de la prévention n'aient pas été appliquées adéquatement ou enfin, que la population mésestime la valeur des services que nous pouvons lui rendre et, par conséquent, n'est pas intéressée à les recevoir.

La seule planche de salut ne peut venir à mon sens que par une nouvelle orientation des programmes éducationnels de nos organisations professionnelles dont le leitmotiv serait la prévention; aussi bien sur le plan national que local. Nos universités devront tendre de plus en plus à développer chez les futurs membres de la profession le sens réel de l'éthique et de la responsabilité professionnelle, en créant un milieu favorable qui permettra à l'étudiant de se familiariser avec les techniques modernes de traitements aux enfants.

Une autre considération importante est celle-ci: Montréal, métropole du Canada, abrite trois sociétés dentaires qui représentent trois éléments différents de la profession.

La situation est unique, mais il faut aussi comprendre qu'elle est nécessaire. Je crois cependant que tous les dentistes du Québec, quelles que soit leur langue ou leur origine ethnique, devraient être groupés, comme dans les autres provinces d'ailleurs, sous une association ou une fédération dentaire provinciale. Ceci pourrait se faire sans affecter aucunement l'autonomie des sociétés dentaires déjà organisées, ni même celle d'une fédération des associations dentaires canadiennes-françaises, dont les bases sont déjà jetées. Notre individualisme ne peut nous être d'aucune utilité, car ce n'est que comme groupe homogène que nous pouvons prétendre au prestige professionnel qui nous est si nécessaire. D'ailleurs, la carie dentaire n'est pas spécifique à un groupe d'individus; c'est un problème qu'il appartient à la profession entière de résoudre. Un comité devrait être formé pour étudier cette question qui, à mon sens, est extrêmement importante; l'avenir et le bien-être de la profession pourrait bien en dépendre.

Un dernier point et je termine.

Notre Collège a fait un travail admirable en créant une législation qui assure la protection de ses membres. Sa fonction administrative voit à sauvegarder l'intégrité de la profession, par des règlements et des lois qui assurent à la population la qualité de services professionnels auxquels elle a droit. Mais par toute cette législation, l'enfant est-il adéquatement protégé? Et pourtant, il devrait l'être encore plus que l'adulte, ne pouvant pas s'offrir lui-même la protection à laquelle il a droit. A mon sens, le dentiste qui refuse de traiter un enfant ou qui lui donne des traitements préjudiciables à sa santé dentaire future, plutôt que de le référer à un confrère plus compétant ou consciencieux, devrait être coupable d'un acte dérogatoire à l'honneur professionnel.

Je tiens à souligner le travail quasi-surhumain du Dr Jean Paul Lachapelle dans la lutte qu'a entreprise le Collège contre la pratique illégale. Jamais il n'a ménagé ses efforts, et le résultat de ses enquêtes en est un brillant témoignage. Je doute cependant des techniques employées pour arrêter le fléau, car je ne connais pas d'occasion où les méthodes cohésives eurent d'heureux résultats. Que les condamnations se succèdent l'une après l'autre, il y aura toujours de nouveaux coupables, encouragés par un public qui nous a retiré en partie sa confiance. C'est l'attitude de celui-ci qui doit être modifiée, ce qui ne peut se faire que par l'orientation d'un programme éducationnel bien positif. La plus grande part du budget disponible devrait être affectée à cette fin. La télévision est un medium d'éducation dont les possibilités sont illimitées. Il en est de même de la radio et de la presse. Un usage rationnel et soutenu de ces mediums de communications et une responsabilité professionnelle mieux comprise nous redonneront cette confiance du public dont nous avons besoin. Voyez-vous, nous avons négligé l'aspect éducationnel et avons considéré notre patient bien souvent, comme un numéro que nous avons tiré dans un jeu

de hasard, avec l'espoir qu'il nous rapporte le grand prix; et comme cela arrive généralement, à ce jeu là, nous avons perdu.

Mais je ne suis pas aussi pessimiste que mes paroles semblent le laisser croire. Il y a une amélioration remarquable depuis les dernières dix années, depuis la dernière guerre plus exactement, dans l'attitude du public concernant l'importance de l'hygiène dentaire comme facteur de santé. L'importance de la santé dentaire de l'enfant est mieux comprise et mieux acceptée. A cet état de chose, j'ose croire que nos programmes dentaires, scolaires, éducationnels, préventifs et correctifs ne sont pas étrangers. Je ne peux passer sous silence l'oeuvre méritoire de la Ligue d'Hygiène dentaire qui a tant fait avec un budget plus que modique pour la cause de l'hygiène dentaire. Cette organisation volontaire qui a pris souche au sein de notre Collège accomplit son oeuvre dans l'ombre, sans faire de bruit, mais toujours d'une manière positive. Cette année, grâce à un octroi fédéral-provincial, elle lance à travers la province cinq hygiénistes de carrière, afin de promouvoir l'éducation de la population. Ces hygiénistes comptent évidemment sur la collaboration des membres de la profession pour supporter, par l'application pratique dans leur cabinet de travail, les principes d'éducation qu'ils vont répandre.

Peut-on réellement dire que les dentistes ont failli à leur tâche, lorsque nous voyons en rétrospective les différentes phases de la recherche scientifique, expérimentale et clinique, qui a contribué à établir sur des bases immuables les grands principes de la dentisterie préventive? La fluoruration des eaux de consommation, les techniques variées d'orthodontie préventive, les taux D.M.F. — d.e.f. qui ont permis de mesurer l'étendue des méfaits de la carie, l'application topique des fluorures, les principes de l'alimentation rationnelle, les techniques préventives et curatives pour le contrôle des affections des tissus buccaux? Est-ce que ce sont là des réalisations d'une profession qui serait déjà en décadence? Non, Mes-

sieurs, depuis vingt ans notre profession se dirige à grands pas vers sa maturité; seul, notre individualisme en a retardé peut-être son plein épanouissement.

Nous ne pouvons prétendre à la maturité professionnelle tant que, comme groupe homogène, nous n'adopterons pas une attitude définie qui favorisera le contrôle de la carie dentaire; et ceci ne peut être assuré que par le contrôle précoce de la carie chez l'enfant.

Ceci entraîne la responsabilité, chacun dans sa sphère d'action, de nos universités, de notre Collège, de nos sociétés et groupements professionnels, de chacun d'entre nous.

C'est Victor Hugo qui a déjà dit: rien n'est plus puissant qu'une idée dont l'heure est arrivée! Nous avons l'idée, faisons la germer, car l'ENJEU EN VAUT LA PEINE.

XVème Congrès Français de Stomatologie

à Paris, France, fin septembre 1957

Le prochain Congrès Français de Stomatologie aura lieu la dernière semaine de septembre 1957.

Deux rapports seront présentés:

1) Les tumeurs des maxillaires à tendance récidivante, à l'exclusion des cancers.

par: Mm. M. PARANT et J. VIGNEUL

2) Gérontologie et stomatologie.

par: M. J. F. LAROCHE, Mme. A. CARTIER, et M. R. CAYRON

Deux questions seront mises en discussion:

1) Traitement des dents des enfants.

par: M. J. M. CHATELLIER

2) Indications et contre-indications de la prothèse conjointe sur dents vivantes.

par: Mm. R. THIBAUT et R. LEHUCHE

Pour tout renseignement, on s'adresse au

docteur Jean Bara, 30 avenue Félix Faure, Paris XV^e, France

**Il est temps de se préparer à assister au Congrès conjoint
de l'Association dentaire canadienne
et de l'Association dentaire d'Alberta
à Banff, du 3 au 6 juin 1956**



Le congrès national fournira l'occasion d'entendre des conférenciers canadiens et américains éminents dans un décor unique.

Parmi ceux-ci on note:

le docteur Arnef Romnes,
chef du service de dentisterie opératoire de
l'Université Northwestern de Chicago.

le docteur H. M. Worth,
autorité du Canada en radiologie dentaire, de
Vancouver, C.B.

le docteur Sid T. Williams,
clinicien émérite en prothèse, de l'Université de
Washington, St-Louis, Mo.

le docteur Alton W. Moore,
chef du service d'orthodontie de l'Université de
Washington, de Seattle, qui donnera la con-
férence du Memorial Grieve; il présentera de plus
une conférence aux orthodontistes inscrits au
congrès.

le docteur Frank Martin,
du service de couronnes et ponts de l'Université
de Toronto qui présentera pour la première fois
son film "Technique de couronnes et ponts".

La section de chirurgie buccale présentera aussi une conférence.

Il y aura de plus de nombreuses cliniques de table.

**Pour tout renseignement et pour retenir des chambres,
on s'adresse au docteur J. A. DUNCAN, 3047, 25th St. S.W. Calgary, Alberta.**

Cotisation: \$30.00 (comprenant l'inscription des dames)

Nouvelles de l'Association

Mémoire concernant les déclarations fédérales d'impôt sur le revenu des praticiens de l'art dentaire.

Pour la gouverne des praticiens exerçant la profession de dentiste et en vue d'uniformiser les renseignements à fournir à la Division de l'Impôt du Ministère du Revenu national dans les déclarations annuelles d'impôt sur le revenu, on a cru opportun d'exposer les faits suivants.

Revenu

1. Le dentiste devrait maintenir un état précis de ses recettes provenant d'honoraires professionnels ou de revenus de placements. Cet état doit être clair pour qu'il soit possible de le vérifier facilement en regard de la déclaration produite. A cette fin, il conviendrait de tenir des livres de comptabilité et les garder jusqu'à ce que le Ministère du Revenu national donne une permission écrite d'en disposer.

Dépenses

2. Sous le chapitre des dépenses, il importe de tenir à jour, à l'appui des frais invoqués, un état des comptes suivants sur des registres que l'on peut vérifier en tous temps:

- (a) Fournitures dentaires et autres du même genre;
- (b) Aide de bureau, infirmière, domestique et comptable, frais de blanchissage et primes d'assurance contre négligence et incurie. (A remarquer que la loi de l'impôt sur le revenu n'accorde aucune déduction à légard du traitement versé par le mari à son épouse ou vice versa. Si un tel montant est payé, il doit être rajouté au revenu)
- (c) Dépenses de téléphone encourues pour usages de la profession;
- (d) Honoraires des aides-praticiens;
On doit fournir au plus tard le dernier jour de février de chaque année, les noms et adresses des aides à qui l'on a versé des honoraires, en se servant de la formule d'impôt sur le revenu, dite Formule T.4 que l'on peut obtenir en s'adressant au bureau de district de l'impôt sur le revenu. (Ne pas confondre cette formule avec la déclaration de revenu à l'usage des particuliers, Formule T.1, à produire au plus tard le 30 avril de chaque année);
- (e) Loyers payés;
Il faut fournir le nom et l'adresse du propriétaire du local (de préférence) ou de son mandataire. (Voir (g));

(f) Frais de port et de papeterie;

(g) Dépenses proportionnelles des dentistes exerçant leur art dans leur résidence —

(a) Le dentiste en étant le propriétaire;

Lorsque le dentiste exerce son art dans une maison qui lui appartient et dans laquelle il a sa résidence, il est accordé une déduction proportionnelle des dépenses de la maison pour le cabinet, le laboratoire, le bureau et la salle d'attente, en tenant compte de l'espace affecté à cette fin par rapport à l'espace total de la résidence. Les dépenses visées comprennent les taxes, l'éclairage, le chauffage, l'assurance, les réparations et l'intérêt sur l'hypothèque (donner le nom et l'adresse du créancier hypothécaire).

Remarque: en ce qui concerne la dépréciation, voir l'item 2 (m).

(b) Le dentiste en étant le locataire;

Le prix du loyer est reparté de même que le coût du chauffage et celui de l'éclairage, si payés par le dentiste; le propriétaire du local acquitte toutes les autres dépenses mentionnées ci-dessus (a).

Les déductions ci-haut mentionnées ne doivent pas dépasser le tiers des dépenses totales de la maison ou du loyer à moins qu'il ne soit prouvé qu'une déduction supérieure devrait être accordée pour des fins professionnelles.

(h) Frais divers (non mentionnés ailleurs);

Les frais portés à ce compte doivent être susceptibles d'analyse et accompagnés de preuves à l'appui.

Les réclamations faites par suite de dons consentis aux oeuvres de charité sont admissibles à concurrence de 10 p. cent du revenu net, provenant de toutes sources, à condition que les reçus en soient soumis à votre bureau de district de l'impôt sur le revenu. C'est là une stipulation de la loi.

On admet, à titre de frais, les contributions annuelles payées au Collège dont relève l'autorisation d'exercer la profession et les cotisations à titre de membre d'une association, si ces déboursés sont mentionnés dans la déclaration.

Les frais occasionnés par la fréquentation des cours postcolaires ne sont pas admis.

(i) Frais incidents;

Les versements d'intérêt effectués en raison d'emprunts sur titres déposés en

nantissement ne peuvent être imputés qu'aux revenus provenant de placement et non au revenu dérivé de l'exercice de la profession.

- (j) La taxe d'affaire est admise à titre de dépense, mais non les impôts sur le revenu;

- (k) Dépenses d'automobile;

On admet les dépenses de taxis et d'automobile faites pour gagner un revenu dans l'exercice de sa profession, quand le dentiste doit se rendre au domicile de ses clients. Les frais de transport du dentiste entre sa maison et son bureau ne sont pas déductibles.

- (l) Contrairement aux années passées, le Ministère n'admet pas, pour 1955 et pour les années à venir, les dépenses encourues pour assister à des congrès, selon les termes actuels de la loi. Cette décision relève d'un règlement émis par le bureau d'appel de l'Impôt sur le Revenu et la Cour de l'Echequier à la suite des deux procès du Dr H. Griffith (médecin).

Dans les deux cas, on a décidé que les dépenses encourues pour un congrès ne pouvaient pas être déduites du revenu, selon les termes de la loi de l'Impôt sur le Revenu. La division de l'Impôt a dû mettre en acte la décision des tribunaux.

- (m) Dépréciation;

La page quatre de la déclaration d'impôt sur le revenu, formule T.1 Générale, explique les modalités de la dépréciation à réclamer en vertu de la Partie XI.

La méthode à employer pour calculer la dépréciation aux fins de l'impôt sur le revenu, est semblable à celle de l'an dernier; vous ne devriez éprouver aucune difficulté, si vous disposez d'une copie de la déclaration de l'an dernier.

Après avoir déduit l'allocation de l'an dernier, vous reportez tout simplement le solde obtenu pour chaque catégorie. Ajoutez à ce chiffre le coût des nouveaux appareils achetés et déduisez le produit des dispositions de biens dans chaque catégorie. Le taux que vous voulez utiliser jusqu'à concurrence du taux maximum (voir ci-dessous) est appliqué au nouveau solde de chaque catégorie; c'est ainsi que vous établissez la dépréciation que vous pouvez réclamer, cette année.

Pour votre gouverne, nous reproduisons ci-dessous le tableau qui figure à la page 4 de la déclaration d'impôt sur le revenu.

Les instruments dont le coût s'établit à moins de \$50.00 chacun sont compris dans la catégorie 12 et bénéficient d'un taux maximum d'allocation de 100 p. 100. Ces instruments ne doivent pas être portés au compte de dépenses, mais doivent être inscrits à titre d'addition dans la colonne 3 du tableau.

Lorsqu'un dentiste exerce sa profession dans une maison dont il est propriétaire et dans laquelle il a sa résidence, l'allocation peut-être réclamée comme il est indiqué ci-dessus sur une fraction du coût de la résidence à l'exclusion du terrain. Par exemple, si la résidence est un édifice en briques d'une valeur de \$12,000 et qu'un tiers de l'espace serve de bureau, le dentiste peut évaluer à \$4,000 l'espace qu'il affecte à l'exercice de sa profession et y appliquer le taux de cinq pour cent, ce qui lui donnera la dépréciation maximum qui lui est accordée pour la première année.

Pour de plus amples renseignements à ce sujet, veuillez vous reporter aux Règlements ou consulter votre bureau de district de l'impôt.

Paiement de l'impôt

3. Paiement d'impôt. Les individus, dont plus de 25% du revenu provient de sources autres qu'un salaire ou d'honoraires, doivent payer leur impôt annuel en versements trimestriels durant l'année courante, aux dates suivantes, 31 mars, 30 juin, 30 septembre et 31 décembre.

Dentistes à salaire

4. La loi de l'impôt sur le revenu permet certaines déductions du salaire. Ces déductions comprennent des dépenses de voyage, les cotisations professionnelles annuelles, le loyer d'un bureau, des salaires à des assistants ou des remplaçants et des fournitures utilisées directement dans l'exercice des fonctions. Il faut toutefois certaines conditions pour l'allocation de ces dépenses et sans entrer dans les détails précis de la loi, en voici les points principaux:

- (a) Il faut que ces dépenses aient été faites en rapport avec l'exercice d'une charge ou d'un emploi.
- (b) Il faut que, d'après les termes de son contrat, l'employé soit obligé de faire ces dépenses lui-même.

(c) Pour déduire des frais de voyage, il faut que l'employé soit tenu ordinairement d'exécuter les fonctions de son emploi ailleurs qu'au lieu d'affaires de son employeur. Les dépenses de voyage encourues par le dentiste pour se rendre de sa résidence à son bureau, ne sont pas déductibles.

Revenu d'une société professionnelle

5. Des dépenses encourues par un associé et non chargée à la société peuvent être déduites du revenu de l'associé. Toutefois, il faut que l'associé puisse établir clairement ces dépenses, montrer pourquoi elles n'ont pas été chargées à la société et prouver qu'elles étaient nécessaires aux revenus de la société.

Cédule

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Numéro de catégorie	Total du capital non déprécié au début de 1955 (col. 10 du rapport de 1954)	Coût des acquisitions en 1955	Revenus provenant des ventes de vieux matériel	Total du capital non déprécié avant l'allocation de 1955 (col. 2, plus 3, moins 4)	Taux %	Allocation sur le coût du capital pour 1955	Total du capital non déprécié à la fin de 1955 (col. 5, moins col. 7)

Voici les taux maxima applicables aux catégories de matériel, qui intéressent davantage les dentistes;

Actif	Catégorie	Taux maximum
Matériel dentaire y compris les instruments dont le coût s'établit à \$50.00 ou plus	8	20 p. 100
Instruments dont le coût s'établit à moins de \$50.00	12	100 p. 100
Fournitures et accessoires de bureau	8	20 p. 100
Edifice en pans de bois (bureau ou résidence utilisée à la fois comme logement et bureau)	6	10 p. 100
Edifice en briques (bureau ou résidence utilisée à la fois comme logement et bureau)	3	5 p. 100

Congrès de l'Association dentaire du Québec
au Château Frontenac
à Québec
les 31 mai, 1er et 2 juin 1956

Liste des conférenciers

Dr Jean-Paul Lussier,
Faculté de Chirurgie dentaire
Université de Montréal
Montréal

*"L'aspect endocrinologique dans la
pratique de la chirurgie dentaire".*

Dr Louis B. Amyot
9 North Church St.
Schenectady, N.Y.

"Prothèse partielle".

Dr Arthur Gold, D.M.D.
26 Maple Street
Springfield, Mass.

*"Practical Considerations in the Diagnosis
and Treatment of Periodontal Diseases".*

Dr A. W. S. Wood
2842 Bloor St. West
Toronto, Ontario

"A Visit to a Paedodontic Practice".

Major A. T. Roger
The Royal Canadian Dental Corps
541 Sussex Drive
Ottawa, Ontario

"Chirurgie buccale".

Dr Gérald Ste-Marie
Veterans Administration Hospital
West Haven, Conn., U.S.A.

*"Treatment Planning in Unusual Oral
Prosthesis Problems".*

Au delà de vingt-cinq kiosques d'exposants permettront aux congressistes de voir les plus récentes réalisations dans les domaines de l'équipement, de l'outillage et des matériaux dentaires.

Pour renseignements, enregistrement, location des chambres, etc.
s'adresser au docteur Gustave Lachance,
191 Grande Allée, Québec 4, P. Qué.

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Journal

OF THE CANADIAN DENTAL ASSOCIATION

The dental health problem*

by DON W. GULLETT, D.D.S.**

Basic to understanding the problems of dental health are certain facts. First, we are dealing with disease — a disease so common among us that many look upon it not as a disease but rather as a natural condition. Secondly, dental disease occurs among 98% of the population, or for all practical purposes everyone suffers some form of its affliction. Thirdly, the treatment of dental disease is time consuming by highly trained personnel and consequently expensive. By way of introduction, let us look briefly at these three points.

The saying is attributed to an Irishman that a man could get used to hanging if he could only be hanged often enough. The prevalence of diseased conditions in the mouth has certainly caused people to more or less ignore it. This attitude has gradually developed over several generations. If dental disease had suddenly

affected the present generation, then everyone would be horrified and insistent upon drastic action in an effort to eradicate it. Teeth are a part of the body, and when any part of the human body decays and falls apart should there not be cause for alarm? One reason why people are not alarmed about diseased teeth is that they cannot readily see what is occurring in their mouths, at least not until it is too late. Comparatively, if toes or even finger nails became diseased, rotted, and fell off, people would see and smell what was happening and become greatly alarmed. The consequences are not much different. The disease, the decay, and the smell are all present in the mouths of individuals. The dentist sees it. If the patient saw it in the same manner he would be astounded, and frightened of the pus and corruption present in his own mouth. Such conditions are present in a large proportion of the mouths of the people and this condition drastically affects the health of the nation.

*Presented, March 22, 1955 to the House of Commons, Senate Committee on Health, Ottawa.

**Secretary, Canadian Dental Association.

As we have stated, 98% of the population suffers from dental disease. No other malady, with the possible exception of the common cold, afflicts so many people. From surveys the highest percentage of the population who were found to be receiving any form of treatment during any one year is 35%. Of this percentage possibly not much more than half really obtained adequate dental care or enough to eradicate the existing disease from their mouths. The others for the most part merely sought and obtained relief from pain. However, it should be emphasized that this situation is not due primarily to lack of dental personnel or for economic reasons, but is due to lack of appreciation on the part of the people of the diseased conditions and their sequelae. Here we have one of the main obstacles in dealing with the dental health problem which we will consider later.

The training of a dentist is a long and arduous one. The course is one of the most expensive on the university campus. The income of the dentist today is one of the lowest of the recognized professions. All of which makes for difficulties in recruitment to the profession. The actual practice of dentistry consists of a continuing series of minor operations which demand a tenseness of concentration by the operator. Statistically it has been proven that the average dentist performs a service for the average patient in 45 minutes, which indicates the time-consuming nature of his work. All that the dentist uses in his practice is high in cost, perhaps more so in comparison with the practice of other professions. Like all other vocations the dentist has been faced during recent years with rapidly increasing overhead costs. During the last ten years the cost of operating a dental practice in Canada has increased 63.6% and during this same interval the fees of the average dentist increased 44.7%. These points are stated to indicate the reason why the service cannot be cheaply performed. Experimentation in altered systems for the rendering of dental serv-

ices has not indicated any reduction in costs, the reason being that the costs of service are of a fixed nature.

From these factual statements you will have concluded that dental disease is not to be brought under control by quick easy methods. It is my intention to prove to you that unlimited possibilities exist if the attack is well planned over a term of years. We will do this by facing each of the present situations and expressing opinion as to what should be done.

1. PERSONNEL

Over the past decade the Canadian Dental Association has endeavoured in every possible manner to bring to the attention of all authorities who should be concerned, that Canada faced a shortage of dental personnel. The crux of the matter is that the training facilities for producing graduates in dentistry are the same today as when the population was nine million. In addition, we have an increased appreciation of dental services on the part of the public. During the last ten years four times the number of applicants have applied to study dentistry as could be admitted to the existing schools. Of necessity classes in the schools must be limited to available clinical facilities for training. This has been a most regrettable situation with the shortage of personnel becoming more apparent each year.

In spite of continuing effort over this long period no move occurred to increase training facilities until during the past year. At two or three centres there is now hope of increasing teaching facilities. However, it should be pointed out that it will be five, six or seven years before any additional graduates can be expected from these developments. New graduates each year as the situation exists today hardly do more than replace losses by death and retirement. The ratio of dentists to population in Canada has fallen drastically during the last decade.

The need for more dentists is an immediate problem but not in as great num-

bers as sometimes stated. The training period of the dentist is long and cannot be reduced. Indeed there are strong arguments advanced for increasing the time.

However, it is possible to greatly enlarge the number of the public served by the fully trained dentist through the introduction of personnel known as dental hygienists. These girls are trained, in the comparatively short period of two academic years, to perform the most time consuming operations in the dental office now done by the dentist. Statistically, it has been proven that the trained dental hygienist saves the dentist over 40% of his time. The result is that the dentist serves a much greater number of people at reduced cost to the patient. The availability of this type of personnel would largely relieve the present shortage of dentists and a real demand exists for this personnel.

But in spite of our recommendations and efforts only one small limited course for dental hygienists has been established in this country. Of necessity these girls must be trained in dental schools. The present schools do not have facilities. As in the case of increasing training facilities for dentists, the difficulty has been financial.

Accusations are cast at times that the dental profession, as a matter of fact all professions, operate a closed shop. Nothing could be further from the truth. It is true that standards for qualifications exist for the protection of the public. The only limitation for qualified applicants is the limited facilities for teaching.

2. PROCEDURE

The fallacy of attempting to legislate people into a state of health has surely been proven. Canada's National Health Programme is not based on such misdirected thinking and is most creditable in this respect. To succeed a health programme must be a carefully planned step by step procedure which carries its beneficiaries gradually along with it. In addi-

tion, the purveyors of the health service must be carefully carried along with altered conditions. Health practitioners are hesitant to leave proven methods. After all, it is the practitioners who deliver the service and it is they, not the legislation, who determine the success or failure of the plan.

How can the dental health problem be met? We have three avenues of approach—Education, Research, and Treatment.

(a) EDUCATION

In spite of statements often made the prime reason for dental neglect is not economic. It is ignorance and lack of understanding. No doubt exists in our minds on this point. The facts produced in experimental areas have proven the point. Once the patient is taught the importance of dental health, little future difficulty occurs. In reverse it is uneconomic to provide dental care for the unappreciative patient, who immediately following treatment continues to neglect himself. The importance of health education in the dental field cannot be over-emphasized.

Organized dentistry has endeavoured to operate in this area by distributing media to the best of its financial ability. The Department of National Health and Welfare, Provincial Departments of Health and voluntary agencies have made contribution. I read the Debates of the House of Commons and I suppose that opposition members need to find items in the estimates to criticize. However, it does hurt to see the items respecting health education criticized year after year when we know the need and have seen the accomplishments. If people are to have improved dental health they must co-operate in the effort or no improvement will result. To obtain cooperation the patient must be educated. The potentialities of health education in effecting improved health have not been even approached.

Health education is a public activity. As rapidly as possible dentists are being

trained in the field of public health to carry out these duties. The training of these men is greatly assisted by the Federal Health Grants. Need exists for a great number of such trained men actively working in health units or areas across the country. These individuals are key men in developing and providing the continuity so necessary to a dental health program.

(b) RESEARCH

The prevention and control of many of mankind's diseases did not come to pass by increasing the facilities for treatment or greatly enlarging the number of practitioners. Diabetes, smallpox, typhoid, and many other diseases were brought under control through research.

Likewise, we believe that the necessity of dental treatment will be greatly reduced through research discoveries. As a matter of fact we already know how to do away with a sizeable percentage of dental decay. It is the business of a health profession to put itself out of business if possible and to work toward that end.

Fluoridation of communal water supplies is a development of dental research which has all but revolutionized our position. Through 10 or 12 years of scientific research in a number of areas, it has been proved that dental decay among children can be reduced by as much as 60%. To the credit of the Federal Department one of these experiments has been conducted in Canada. Due to the fact that in certain areas fluorine has naturally occurred in the water supplies for generations, no other public measure ever had such long laboratory experimentation. By scientific survey methods it has been proven that the addition of the required amounts of fluoride salt to the water has no deleterious effect upon the human body and indeed makes no change in the taste, odour, or purpose of the water itself. No other public health measure has ever been adopted so rapidly. There are now between 21 and 22 million people in Canada and the United States drinking fluoridated water. No sane reason exists

for not adopting this measure. By this simple means a generation of Canadians may reduce by half the amounts of dental decay. The scientific evidence is favourable, the measure is supported and recommended by every recognized health organization, and the introduction of the measure should be urged and hastened by all authoritative bodies.

Of course fluoridation is by no means the whole answer. The excessive consumption of carbohydrates is a great factor. Dental caries is only one of the problems in dentistry. In adult life more teeth are lost by diseases of the tissues surrounding the teeth than by the decay of the tooth itself.

Through strenuous effort we have seen rapid advance in dental research during the last decade. We believe the benefits to accrue out of research are unlimited and that monies spent on research will give dividends one hundred fold as compared with the same money spent in the lost cause of providing treatment services. Our great need is for highly trained personnel in the research field and the profession is endeavouring to develop such men as rapidly as possible.

(c) TREATMENT

Oftentimes we wonder at the meaning of general statements appearing in the press giving endorsement to the introduction of legislation purporting to provide dental services apparently for all the people. If the proposers of these statements know how this is to be done, or the feasibility of the proposal in any way, they should certainly tell us. Frankly we do not know. We do know something about the difficulties, and through the experience elsewhere know something about the failures in attempts to do it.

Let us look at this hypothesis for a moment. Through a survey just concluded we know that during the year 1953 it took an average of nearly two hours to render services for each dental patient. One third of the population was inadequately served. The whole population is made up of potential patients. A little arithmetic

will show plainly that any attempt to provide such a service would be to make the service so thin as to be of little or no value.

What end would be accomplished? Are we so backward in this advanced age as to concentrate our efforts on repairing lost structures? While we have our virility we could hardly be expected to willingly cooperate in such a hopeless adventure. To attempt it is to become bogged down in a programme sans progress, sans purpose, and sans true results in dental health.

We live in an age of prevention. To prevent or control means greatly reduced costs but more important it means the retention of health. We do not leave the barn door wide open and then spend the night looking for the cattle. We are dealing with a problem of disease which can be largely reduced if proper measures are taken. Those pants with patches we used to wear have reached the age of prevention, for now mother buys them with leather patches in place at the most vulnerable spots. If we think sanely, the approach to the problem must be from the standpoint of control and prevention, making the best possible use of available personnel. Admittedly a sane programme of this nature does not possess as much political appeal unless people are educated to it. However, before the giving of gifts we should be certain that the benefit is right.

Remember this: that a programme of control and prevention includes much more than reduction in the formation of cavities in teeth. It includes the interception of crooked teeth, the control of diseases of the gums and jaws, and the other factors which contribute to the loss of the teeth. In dentistry there is only one age where these preventive measures can be effected, and that is among the youngest age group of the population. Here is where the concentration of effort should be made. Here is where the best-trained personnel of the profession should concentrate their efforts. The end result of a new generation of Canadians with

greatly improved mouth health is a far better objective than any impossible attempt to repair the dental cripples of the nation. Here the idea is to retain the health of the mouth, not allow disease to develop, and then attempt cure.

The economics involved is beyond our scope here. However, it should be pointed out that the heavy expense of dental service lies in the restorative field, in the replacement of lost teeth. It should be easily discerned that a programme reducing the need is sound from the economic standpoint.

But you ask, can this be done? Ten years ago when we presented these ideas before the Parliamentary Committee on Health Insurance they were theoretical. Convinced they were fundamentally right, we were successful in establishing experimental areas and now possess adequate statistics to prove the correctness of our views.

WHAT ARE THE NEEDS?

In conclusion let me present to you the prime needs in order to deal effectively with the dental health problem.

1. More qualified dentists trained in public health are required to educate parents and children, to coordinate activities respecting dental health in health units, and give leadership in communities. I have tried to emphasize the vital nature of this matter of education if any programme is to succeed. Patient appreciation is fundamental to the degree of improved dental health achieved.
2. Research in dentistry needs support. The beginnings in research of the last few years have already indicated the possibilities of the future. Dental disease is not sensational like some other diseases and consequently does not attract large voluntary donations. There is need for more well trained research personnel and facilities.
3. The lack of training facilities for dentists in Canada is due to the costs involved. This is an immediate need. Not only in order to secure an increased number of graduate dentists but also to supply auxiliary personnel in the form of dental hygienists.

4. Adoption of the public health measure of fluoridation undoubtedly will mean a real reduction of dental need for the future. Ardent support by representative people will quicken the adoption.

These are objectives for which the Asso-

ciation and its branches, which I have the honour to represent, are working assiduously to accomplish. We believe them to be the true aims for the betterment of dental health for the people of Canada. We trust that we may have your support.

Varied applications of direct pin inlays

by ROLAND T. LAMB, B.Sc., D.D.S.,* Montreal

Establishing sufficient retention for gold inlays, crowns and fixed bridges often taxes our ingenuity and unless this retention is adequate the restoration cannot be successful. It is the purpose of this paper to present, first, a number of variations in cavity preparation employing retentive pin inlays and second, the manipulation of inlay waxes so that direct wax patterns may be made in these preparations.

The methods described meet specific retentive needs for types of restorations formerly regarded as inadequate and resolve some of the problems which have plagued us in the past.

RESTORATION OF EXTENSIVE GINGIVAL EROSION

The greater the amount of gingival erosion the greater is the problem of its restoration. When it is extensive the mesial and distal walls of the eroded area extend beyond the line angles of the tooth. The occlusal and gingival walls afford insufficient retention form for a gold inlay or plastic restoration. Gold foil can be used but in extensive areas it may at times be contraindicated.

The following technique offers a practical and effective method of restoring tooth structure lost through erosion of

the gingival and part of or all the middle thirds.

Two parallel pin holes are made with a No. 700 cross-cut taper-fissure bur, using either a straight or contrangled handpiece. These are made at the greatest axial depth of the eroded area at points one millimeter from both the mesial and distal root surfaces. (Fig. 1-a)

The pin holes are one to one and a half millimeters deep. (Fig. 1-b)

Parallelism of these two pin holes is obtained by securing a steady finger rest position which will allow freedom of movement of the handpiece and then the bur is worked alternately in each of the holes. In the average case these two pin holes are roughly parallel with the root surfaces (i.e. mesial and distal surfaces), and as well, parallel with the occlusal plane. The parallelism of each hole with the other is essential but the actual plane of the holes in relation

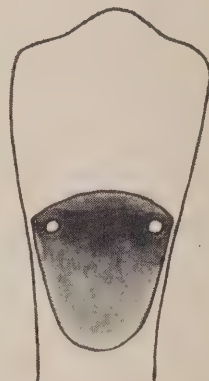


Fig. 1A

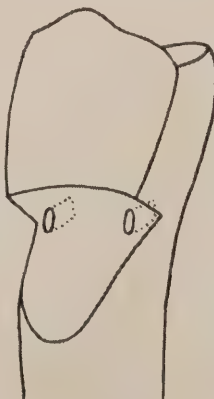


Fig. 1B

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to the long axis of the tooth is secondary and will have no effect other than to change the direction of removal of the direct wax pattern at a subsequent step in the procedure.

Having prepared the two pin holes, the next step is to (a) remove caries (which is seldom present) and (b) remove acute enamel margins. In any restoration of erosion it is recommended that the original area be enlarged slightly to preclude a recurrence at the cavo surface margins¹.

The preparation is now complete. The occlusal and gingival walls may be paralleled if more retention is deemed necessary, but such cutting concurrently destroys one advantage of this type restoration — namely the lack of pulpal irritation which it causes. There is far less thermal shock from this pin type of inlay than with the classical type of metallic gingival restoration because there is much less bulk.

Both the cavity preparation and forming of the wax pattern are facilitated if a rubber dam and retracting gingival clamp are employed.

WAXING

Any approved inlay wax is satisfactory. It is suggested that a medium hard, such as Maves' Green No. 3 be used as it is neither too hard nor too soft for carving at tooth temperature.

Lubricate the preparation thoroughly and then blow out, with air, all the excess so as to leave only a thin film. Kerr's Microfilm gives consistent results.

Some softened wax is carried to the preparation on a spatula or wax carrier loop. Many have found that carrying molten wax to the cavity preparation is awkward if not embarrassing. This is overcome by using a wax carrier, which is an annealed explorer or piece of twenty-three gauge wire in a broach holder. The loop hole is made one millimeter in diameter. This carrier will enable one to place a small drop of molten wax with accuracy.

It is essential that the wax be forced into the pin holes in the preparation and this is readily accomplished by using a pointed instrument whose end is shaped to a size slightly smaller than a No. 700 bur. A suitable instrument can be made from a No. 5 explorer, root canal spreader or 23 gauge wire in a broach holder.

Heat this wax plugger at a point about half an inch from the tip. The effect of heating it away from the tip ensures that the wax will be driven to the base of the pin holes.

Push the heated end through the wax pattern first into one pin hole and then into the other. The wax will then melt and run ahead of the tip and will fill the two pin holes completely with wax. Repeat this several times and then remove the pattern with an explorer for inspection. Should one of the pins break off it means one or both of two conditions exist:

(a) insufficient lubrication or, more likely, (b) lack of parallelism of the holes. If the pattern is deficient internally it is returned to the cavity and corrected with the heated wax plugger.

Contour the pattern with a 14 gauge wax sprue, while it is still in the tooth. Remove the pattern by the sprue and place it on a damp swab.

Attach the sprue to a sprue former, and invest the pattern as soon as possible to minimize distortion².

Before dismissing the patient, a pledget the size of a No. 2 round bur is rolled from a few wisps of cotton and forced into each pin hole and the external orifices are then filled with a surgical cement.

The casting is made in 22 karat gold and if a short piece of the sprue is left on the casting it facilitates the removal of the inlay when seating and polishing it. The sprue tab is removed just prior

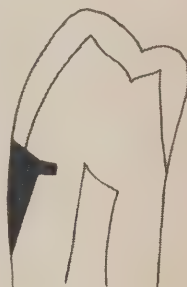


Fig. 1C

to cementation. Ideally, the insertion is done under rubber dam with a gingival clamp in position.

SPLINTING OF TWO POSTERIOR TEETH WHICH HAVE NO INTERPROXIMAL RESTORATIONS

Assume that the lower first and second bicusps are to be splinted. A distocclusal box-slice preparation is made in the first bicuspid and parallel with it a mesi-occlusal one in the second bicuspid. (Fig.

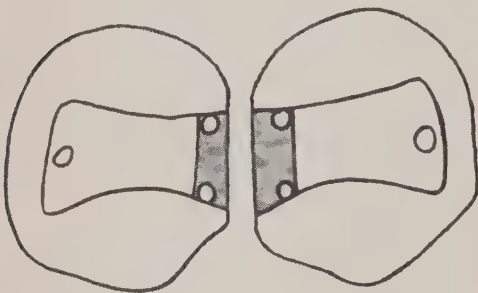


Fig. 2A

Both wax patterns are to be made as one. Soft inlay wax is forced into the preparations to fill them partially. If completely filled at this stage it is more difficult to use the wax plugger efficiently in the gingival pin holes. The hot wax plugger is then used to adapt wax to the pin holes and to "iron away" the interproximal excesses. Remove the pattern with an explorer and examine it. If satis-



Fig. 2B

2-a). To secure the required additional retention, a pin hole 1.5 millimeters in depth is made in the pulpal floor at the mesial extremity of the occlusal dovetail in the first bicuspid and similarly at the distal of the occlusal dovetail in the second bicuspid. Still further retention is gained by accentuating the buccoaxial and linguo-axial line angles of the proximal boxes with a No. 700 bur and by extensions of them into the gingival floors to a depth not exceeding 1 mm. These pin holes should be in dentine and not at the dentino-enamel junction.

Having employed the previously outlined method of paralleling, there will now be three parallel pin holes, one dovetail and one proximal grooved box in each preparation. The retention of this is much greater than that of the conventional MOD preparation.

Covering the incisal or occlusal surfaces completely ensures that all axial loading is applied to gold and there is then no possibility of the tooth being sheared away from its inlay. (Fig. 2-b).

factorily adapted return it to the preparations and add excess molten wax to the occlusals. Centric and lateral excursions can be registered in this softened occlusal wax. This may be done through the rubber dam if the clamp is removed and the dam is moistened with a lubricant. If a relatively dry field can be maintained, then the dam may be removed before registering the excursions. Anatomical carving precedes spruing. If the pattern is large multiple spruing is more advisable.

SPLINTING OF TEETH WHICH HAVE RESTORATIONS

Posterior teeth having large retentive inlays can be splinted together without removing, remaking and soldering. A locking device of cast gold pins and locked grooves is made which is then cemented into the inlays and holds them in retentive union. It becomes a "solderless joint". Painstaking drilling is the prerequisite,

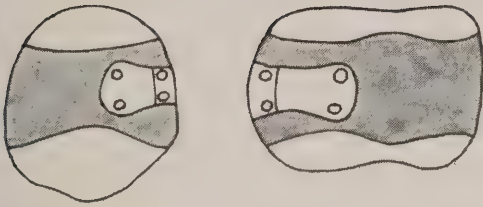


Fig. 3A

but the overall time consumption is appreciably lessened.

Parallel proximocclusal preparations are made in the inlays. The occlusal portion in each inlay is approximately 3 mm. mesiodistally, 2 mm. buccolingually and 1 mm. deep. (Fig. 3-a). It is dovetailed slightly at the approximal end. The proximal portion is 2 mm. buccolingually, 3 mm. occlusogingivally and has a gingival floor 1 mm. wide. Two pin holes are made in the pulpal floor of each dovetail, to a depth of 1 mm. These may go through the gold and into the dentine. If the inlay has an adequate bucco-lingual diameter then it is not weakened appreciably. Care is exercised not to undermine the harder overlying gold, otherwise the resultant undercut will prevent the wax pattern from being withdrawn.

The bucco- and linguo-axial line angles of the proximal boxes are accentuated with the No. 700 bur to form grooves. These are then projected apically to form one millimeter pin holes in the gingival floor. In each preparation there will be four pin holes, one slight dovetail and one locked groove. A light discing of the approximating inlay surfaces will facilitate interproximal wax carving and give more bulk to the casting.

The preparations are waxed as a unit and one 14 gauge wax sprue is adequate. This locking device will have at least ten major retentive features and when cemented into position will provide excellent fixation.

DIRECT TOOTH REPLACEMENT

A case presents with the lower first molar requiring replacement and with

large well constructed inlays in the second bicuspid and second molar. To construct a bridge fixed at both ends would ordinarily require the tedious removal of the inlays and re-preparation of both teeth for new inlays. This situation can be circumvented by constructing a cast gold sanitary pontic which is cemented into the two abutment inlays.

As in the case previously outlined, preparations with four parallel pin holes, occlusal dovetails and locked grooves are out in the distocclusal of the second bicuspid and mesiocclusal of the second molar inlays. (Fig. 3-a). Soft inlay wax is rolled into the desired width and thickness of the pontic. It is made four millimeters longer than the space between the abutments.

While soft it is wedged between both proximal boxes and aligned so that it is just clear of the bite. The terminal ends are adapted to the proximal locked grooves and pin holes. Deficiencies are corrected and then wax is added to the occlusal dovetail and pin holes.

Excesses are removed and the wax bar with its two terminal locking wax patterns is withdrawn, at mouth temperature, and checked to make certain that all pin holes and grooves are well adapted. Replace the wax bar to position and add molten carding wax onto the occlusal surface. Have the patient close slowly and gently into centric position. If the occlusal surface is molten, no distortion or bending of the main bar occurs. A slower but safer method is to build the occlusion with small increments of molten wax interspersed with repeated centric closures. Another way to preclude distortion is to imbed an acrylic rod that will rest in each locking preparation. This will burn out with the wax when the casting ring is heated.

The wax bar is now carved to the desired anatomical form and depending on its length, two or three wax sprues are attached. Cast the bar and place it in posi-

tion. Adjust it for all excursions and cement into the original inlays.

This device is sufficiently retentive and strong enough to be employed in any space that would be spanned by the conventional type fixed bridge. There is no difficulty in maintaining parallelism of the pins in short spans, but in longer spans there is a tendency for the pin holes to diverge.

FIXED BRIDGE FOR MALALIGNED ABUTMENTS

Not infrequently a posterior mandibular fixed bridge is foregone because the abutment teeth are in poor alignment. This situation is usually handled by constructing a broken stress bridge or a removable partial denture. By employing a pontic with locking inlays, a fixed bridge can be made despite the most severe malalignment of the abutments. (Fig. 3-b).

Conventional preparations are made in the abutments and no attempt is made to parallel each to the other. The main considerations are retention and good bucco-lingual extension. An indirect impression technique is used to make the abutment inlays and an accurate bite relationship is essential. Before investing the patterns some of the wax is carved away to form two small parallel proximo-occlusal cavities. When cast, the mesio-occlusal and disto-occlusal locking cavities can be accentuated in the laboratory—even the pin holes can be started. This reduces the amount of chair time required once the inlays have been cemented to place.



Fig. 3B

The bridge is then completed as previously outlined.

There are many variations of this procedure. If one prefers the direct technique, then the locks can be started in the wax patterns before they are removed from the teeth.

If the reversible hydrocolloid technique is employed, the abutment inlays and the locking pontic can be constructed in the laboratory.

A bridge can be assembled and soldered leaving the final joint open. Once the two parts are cemented to place then the "solderless joint" is constructed. In this fashion any type of pontic having a cast gold occlusal can be used and the lock can be placed anywhere along the span.

When a fixed bridge requires double abutments at both ends, it introduces the hazard of paralleling four preparations. This mental stress can be reduced by employing the solderless joint. Extensive splinting of malaligned teeth is simplified.

RETENTION FOR CORES ON VITAL TOOTH STUMPS

Another use for direct pin inlays is in the restoration of badly broken down vital teeth. This situation occurs most frequently in heavily restored maxillary bicuspids where a buccal cusp has sheared off leaving a poorly supported lingual enamel plate. In some of these cases, even by resorting to a gingivectomy, there is insufficient tooth structure remaining to support and hold a veneer gold crown.

The pulp in such teeth has usually receded considerably so that pins can be inserted without undue irritation.

The irregularities of the stump are reduced. Four parallel pin holes, 2 mms. deep, are made in the pulpal floor, 1 mm. from the root periphery. (Fig. 4-a). Care is taken not to break through to the cementum. The pin holes are waxed direct and a wax core is built up over them. It covers most of the pulpal surface and allowance is made for a gingival seat 1 mm. wide on the buccal. The core is of

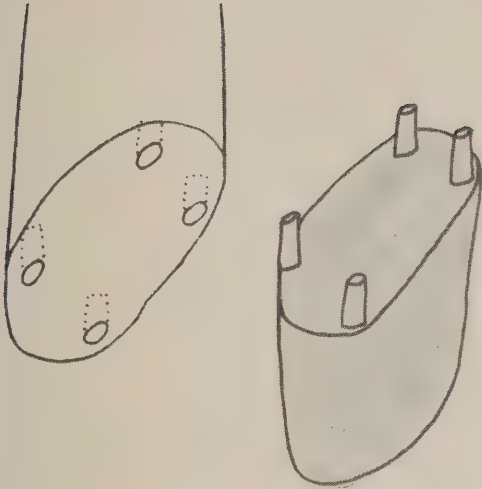


Fig. 4A

such a length that the overlying full crown will be at least 1 mm. thick on the occlusal surface.

This wax core with pins, when cast, will provide a four pin staple which is quite retentive. Before cementation of the core, axial grooves may be made with discs and No. 700 burs in two or more surfaces of it to provide added retention for the planned full crown.

By any indirect method a veneer crown is made to be cemented over the remaining root and

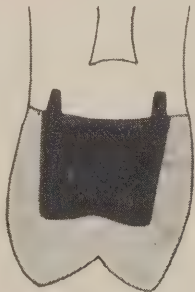


Fig. 4B

core. (Fig. 4-b). The previously established buccal sub gingival shoulder will allow for a narrower bevelled gold collar on the processed acrylic veneer crown.

SUMMARY

Methods of wax manipulation and cavity preparation have been described. They consider the use of direct pin inlays for the

- (1) Repair of extensive gingival erosion.
- (2) Stabilization of teeth with and without inlays present.
- (3) Replacement of a posterior tooth utilizing restorations already present in the abutment teeth.
- (4) Replacement of posterior teeth in cases of extreme abutment malalignment.
- (5) Repair of badly broken down vital teeth with a stapled core.

CONCLUSIONS

These techniques of direct wax adaptation to paralleled pin holes and locked grooves allow for many variations of retention form in cavity preparations for direct inlays and thereby broaden the scope of feasible restorative dentistry.

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The rates of flow of the secretions of the human parotid, sublingual, and submaxillary glands have been recorded during sleep, immediately after awakening (sublingual and submaxillary secretions), and during the so-called "resting" state. The data indicate that the parotid gland does not secrete spontaneously and suggest that the sublingual and submaxillary glands, in this regard, act similarly to the parotid. It appears, therefore, that saliva collected routinely in the laboratory as "resting" saliva is, in fact, stimulated or activated secretion and gross variations in the rate of its secretion are due to fluctuations in the intensity and frequency of internal stimulation.

Journal of Dental Research, February, 1956.

The role of the dentist in civil defence*

by HUGH R. McLAREN, D.D.S., D.D.P.H., Ottawa**

Civil Defence planning, both in this country and in the United States, is based on the probability—which amounts virtually to certainty—that, in the event of any future all-out war, the enemy will attempt to subject many parts of the North American continent to aerial attack. If such an attempt is made a number of our cities and towns will be the targets for one or more of modern warfare's dubious refinements: nuclear, biological, and/or chemical weapons.

In the event of such attacks on any of our large urban centres, the numbers of killed and injured will be measured in thousands. The results of the atomic bombing of Hiroshima and Nagasaki in World War II are, to-day, considered but miniature scale-models of the task which will confront those of us whose job it will be to rescue the living, to treat and rehabilitate the injured, and to bury the dead, as the result of attack by an enemy using nuclear weapons. Developments in this field, alone, over the past decade, suggest that the magnitude of that task has increased geometrically since the day of the first atomic bomb.

Certain it is, that we must face the prospect of mass casualty care on a scale which is unprecedented in previous Canadian experience, either civil or military. Normally, the prime responsibility for, and the burden of, casualty care in time of disaster is shouldered by the medical profession and its ancillaries. But, here, we are dealing with a possible situation in which existing medical and nursing

resources would be unable to cope with even the emergency measures which will be so urgently needed. One of the major concerns in the planning of Civil Defence Health Services, therefore, has been the study and development of every means possible of augmenting the medical and nursing services, for the purpose of mass casualty care in the event of disaster.

One important means whereby this can be accomplished is, of course, the training of other professional health services personnel to co-operate with physicians and nurses in the building of an efficient, smoothly-functioning casualty services team. This afternoon, I have been asked to discuss the role of the dentist, as a member of that team.

Aside from physicians and nurses, the next-largest professionally-trained group of health workers available is the dental profession, which numbers approximately 5400—or, roughly, one dentist per three physicians, here in Canada. (In the United States, this ratio is approximately 1:2). Its own professional and technical training, which closely parallels medical training in many respects, indicates that the dental profession has much to offer. Now it is a fact that, in mass casualty care of the types and extent which will result from bombing attacks, the dentist will be called upon to assume duties and responsibilities beyond the scope of his normal day-to-day practice experience. On the other hand, his training, skills and abilities make him uniquely adaptable to receive the further training needed to fit him for whatever he may be called upon to do.

Let us, for a moment, review some of the attributes of the average dentist which

*Presented to the Physicians' and Dentists' Indoctrination Course, Canadian Civil Defence College, Arnprior, Ont., Wednesday, 7 March, 1956.

**Assistant-Chief, Dental Health Division, Department of National Health & Welfare.

have a bearing upon his potential usefulness to the Civil Defence Casualty Services organization. In the first place, as an undergraduate he received training in the basic medical sciences; he was also trained in the principles of medicine and surgery, in the administration of anaesthetics—both local and general, in the prescribing and administration of drugs, and in roentgenology. As a practising dentist he has acquired skill and experience in treating patients under extreme conditions of pain and infection, in the control of haemorrhage, in the treatment of shock, and in the reduction and immobilization of fractures. Many dentists have taken specialized graduate and post-graduate training in fields of special significance to Civil Defence Health Services, ranging from anaesthesia to public health. Almost half of the dentists in practice in Canada, today, have served at one time or another as members of Canada's Armed Forces. Two further characteristics of the average dentist are worthy of note: as a result of his training and practice experience, he has acquired a high degree of manual dexterity coupled with well-developed co-ordination of hand and eye, plus the faculty of being able to master new and unfamiliar techniques relatively quickly.

The organization and functions of the Civil Defence Health Services, particularly as they involve casualty care have been discussed with you. Where does the dentist fit? What duties will be expected of him? Organized dentistry's concept of the dentist's role is outlined in the following Statement of Policy issued by the Canadian Dental Association in 1951, which was accepted by the Civil Defence Health Services Working Party on Casualty Services:

In particular

1. Dental Societies should carefully survey dentists in local areas.

2. Allocation of (dental) personnel should be carefully arranged in respect to such matters as
 - (a) Dentists liable for call in R.C.D.C. should not be given chief responsibilities.
 - (b) Dentists with special training should be allocated to positions where that training can be taken advantage of.
3. Dentists can probably best serve as part of a team with medical, nursing and other personnel. (The dentist should be trained to be able to take over as head of a team, if necessary.)
4. Dentists, with a minimum of additional training, can serve in the fields of anaesthesia, first aid, medical assistants, blood transfusions, etc.
5. Dentists outside municipalities should be included in any training program, as they may easily become the most important.
6. Intensive training in all phases (of Civil Defence Health Services) is necessary, in order that dentists may function in different capacities.

In general

1. It is considered that training can best be carried out in a representative team arrangement.
2. Emphasis will probably be placed on target areas, and training should be intensified in these areas.
3. Distribution of educational subject matter is necessary."

It will be recalled that the point at which casualties first will come under the care of medical personnel and receive emergency medical treatment, is the Advanced Treatment Centre. This will be the point where our resources will undergo the most immediate strain, where the need for professionally-qualified health service personnel will be the most urgent, at least in the early aftermath of disaster. For the most part, it appears logical that the dentist should be designated to be a member of the A.T.C. team, in order that his capabilities will be most effectively exploited. It has been suggested that he serve as an administrative officer,

and as a medical assistant, supervising and carrying out emergency treatment.

It is further suggested, here and now, that his Civil Defence training must be such that, with one exception, the dentist will be prepared to be completely interchangeable with the physician at any stage of the casualty care organization, from the Reception Wing of the A.T.C. up to the point where definite surgical and/or medical care is initiated. In other words, his training should qualify him, not only to assist the physician, but also to act independently if no physician is available, in the control of haemorrhage; emergency transfusion; immobilization of fractures; dressing of wounds and burns; the maintenance of airways; the treatment of shock, and the relief of pain. The exception is the function of triage. Military medical experience has shown that the value of triage depends to a very great degree upon its being carried out by a physician or surgeon having the skill and judgment that are acquired only through long clinical and surgical training and experience.

Any programme of training for the dentist which attempts less will be not only unrealistic, but also will fail to develop the full potential of his usefulness. It is not difficult, nor is it improbable, to visualize disaster situations where there may not be available any physician to supervise and co-ordinate the efforts of the casualty care team. Of course, there may not be a dentist left either, but it is submitted that his training should be predicated on the assumption that he could well be the person upon whom this responsibility will fall.

The Canadian Dental Association's suggestion that the dentist having special qualifications should be given a special assignment is considered sound. For example, take the oral surgeon, who is specially trained in the field of major oral surgery, and who has, as a general rule, considerable experience in hospital and operating-theatre procedure. It is suggested that he could be employed to far better

advantage at a hospital designated for the treatment of maxillo-facial injuries and plastic surgery. In addition to taking on special responsibilities in his own field, it would appear that he could be of significant value to the surgical team. The orthodontist and the paedodontist have acquired special skills in the handling of child patients. The dentist having specialized qualifications in the field of dental prostheses could, it is believed, be of great assistance to the orthopedic surgeon. Undoubtedly, our Public Health Services will undergo a period of most critical shortage of trained personnel; the dentist having Public Health training should be prepared to fill this gap.

The potential value of the dentist to Civil Defence Health Services is not inconsiderable. In order to develop that potential, however, and to ensure maximum employment of his capabilities for service in time of need, he requires further training. It seems clear that in the case of the average dentist, the most urgent need of his services will be during the hours and days required to clear casualties from a disaster area, to save those lives which can be salvaged, and to get casualties to hospitals where definitive care will be instituted. If this be so, then it seems equally clear that the resources offered by this country's dental personnel should indeed be surveyed, and a training programme developed which will be based upon their present levels of knowledge, geared to the needs for their services and to the functions expected of them.

A start has been made in this direction; this course is the first Combined Physicians' and Dentists' Indoctrination Course to be given at the Canadian Civil Defence College. But this is not sufficient, obviously. Local training is necessary, both for purposes of indoctrination and technical training of the dentist. It is not the purpose of this presentation to set forth a blue-print for that training, but rather, to suggest some of the things which such a programme might encompass.

I must confess that I find it fairly

easy to become quite lost when listening to people like Dr. Pace, Dr. Stewart, and Dr. Taylor discuss the hazards of radiation, and the diagnosis and treatment of radiation sickness. However, it is my impression that radiation sickness cannot be diagnosed until its symptoms appear, and that anyone already exhibiting those symptoms by the time he is brought to the Advanced Treatment Centre is probably going to die anyway, despite treatment. Now, it is not suggested that the dentist should not be given training in this phase. On the other hand, it seems only practical that his training should be concerned more immediately with the types of wounds and injuries, the early and effective treatment of which will save lives. These, of course, are the types of wounds and injuries resulting from blast and from fire; the same types of traumatic wounds and burns which were encountered in World War II, in Korea, in Rimouski and Cabano. The one disturbing element, here, is that if anyone should be so careless as to drop an H-bomb on one or more of our cities there will be a great many more of them.

Where the responsibility for the development and conduct of a training programme for the dentist rests, which will enable him to be responsible for the carrying out of emergency medical care of casualties, it would be presumptuous of me to say. In the United States, the dental profession itself has assumed this responsibility, with the guidance of the U.S. Federal Civil Defence Administration. Working with State and local defence authorities and their medical advisory committees, State and local dental societies have organized and are carrying out technical training in mass casualty care for their members. Similar training is being given to dental officers in the U.S. Armed Forces, both Regular and National Guard, and to those on Reserve. The Medical Education for National Defence programme for the purpose of training

undergraduate medical students in mass casualty care is currently being studied with a view to extending this training to undergraduate dental students. Officers of the U.S. Navy Dental School have developed a series of training films and some remarkably life-like mechanical training aids which, for their ingenuity, are surpassed only by the live casualty simulation work done here, at the Canadian Civil Defence College, under the inspired direction of Major Bingham.

In summary, this presentation has reviewed the attributes of the dentist in relation to his role in Civil Defence. His training and practice experience suggest that he is the logical person to augment and amplify the physician's services, in the event of disaster; and that, essentially, his role should be that of a member of the medical care team in the Advanced Treatment Centre. The dentist with specialized qualifications and experience, however, should be assigned to whatever place in the Casualty Care Services where his skills can be most effectively employed.

The dental profession recognizes that further training is required to develop fully its potential usefulness in Civil Defence. It is suggested that Civil Defence training for the dentist should include both indoctrination and technical training in the supervision and carrying out of emergency medical treatment under conditions of mass casualty care.

Such training cannot be left to blind chance. With its limited resources in professionally-trained health services personnel, Canada cannot afford any possibility of the confusion which inevitably would result from failure to co-ordinate their efforts to cope with large-scale disaster casualty care. As members of the medical, dental and nursing profession we have the paramount responsibility of learning to work together as a team, with the deft precision of a Guards' drill-platoon. The lives of many thousands of our fellow-citizens may well depend upon how well we achieve this objective.

Dentigerous cyst with chronic osteomyelitis

by HENRY A. THOMPSON, D.D.S., B.Sc.D., Toronto.

A Case History

Patient was referred regarding a sub-acute swelling in the body of the mandible, right side, on May 9th, 1955.

Age 35 — strong, healthy farmer — no systemic symptoms. The swelling had been acute 3 times during the past 2 years — controlled by penicillin injections given by local physician. Last acute flare up was in April, 1955, when the physician consulted the local dentist re a dental cause.

After x-ray examination (see figs 1, 2, and 3.) it was decided to ventilate a large dentigerous cyst with osteomyelitis, and to remove the denticle.

The physician was consulted. It was decided that he should continue his daily intermuscular injections of 1,200,000 units



FIGURE 2

Dental x-ray showing in more detail the involvement of the dental area.

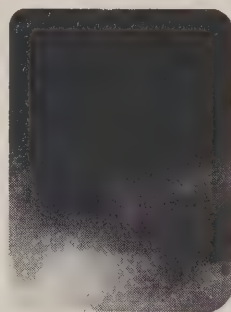


FIGURE 3

Dental x-ray showing involvement anterior to the lower right lateral incisor. A sequestrum is seen at the lower right portion of the picture.

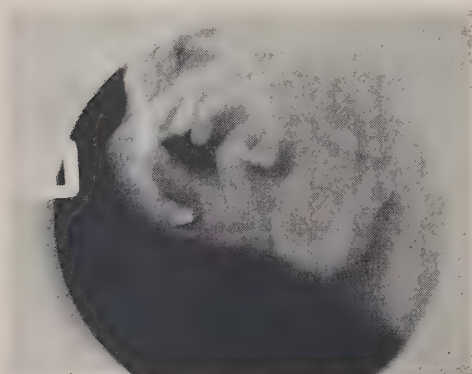


FIGURE 1

Lateral Jaw x-ray showing dentigerous cyst involving unusually great vertical depth of the jaw. Osteomyelitic changes are seen, and the denticle is on a level with the mandibular canal, on the cortical plate of the lower border of the mandible.

of penicillin, and that we operate in 4 days' time.

On May 13th, 1955 he was operated under nitrous oxide anaesthesia with Tri-lene, and with a mandibular nerve block to reduce shock and haemorrhage. Monocaine-penicillin was used for this injection, supplemented with penicillin 400,000 units intramuscularly in the buttocks.

A large muco-periosteal flap was reflected down to the lower border of the body of the mandible, the overlying "egg shell crackling" bone removed with a Coupland gouge, and the remaining overlying bone removed with a surgical bur.

The cyst lining was still partially intact, and was grasped in the jaws of Spencer-Wells forceps which were rotated to enucleate the membrane. The mandibular canal contents and the denticle were then in plain view. The canal contents were retracted and a groove cut in the denticle with a cross cut fissure bur. A miller elevator was engaged in this groove, and

the denticle lifted out, sufficient bone having been removed so that it could be delivered without pressure. (see Fig 4—An x-ray picture of the denticle after removal.)

A dressing was inserted consisting of a sterile 3X3 gauze square with Dr. Arthur E. Smith's formula surgical dressing (Getz paste). This was changed the next day, and since patient had to come a long way, Whiteheads varnish was used for the next and subsequent dressings, and appointments made at 2 to 4 day intervals.

There was no elevation of temperature, and little pain, some swelling, no trismus. Some anaesthesia was present.

By June 2nd, 20 days after the operation, the size of the dressing had been reduced to 2 inches of $\frac{1}{2}$ " iodoform gauze, and sensation had returned to normal. Patient was discharged on June 21st.

The particular interest in this case is the large vertical extent of the cyst and the osteomyelitis resulting from infection, and the fact that by intra-oral surgery the lesion was eradicated with no resultant ill effects or disfigurement.

86 Bloor St., W.

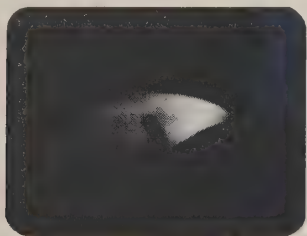


FIGURE 4

An x-ray picture of the denticle after removal. The groove cut with a cross cut fissure bur was used to deliver the denticle, which resembles the appearance of a tooth.

Studies of the metabolism of fluoride help in understanding the rapid disappearance of fluoride from the body after ingestion and the appearance of fluoride in the bones and teeth. When all the evidence is put together, it may be concluded that in water fluoridation adequate factors of safety exist against the known toxic effects of fluoride. Additional studies are needed of population groups that have been for many years drinking fluoridated water. At present, the evidence does not justify the postponement of water fluoridation.

Replantation of individual teeth

by JAMES P. McGUIGAN, D.D.S., F.I.C.D.,* Halifax, N.S.

Replantation is the term used when the same teeth are replaced in their own alveoli, having been removed purposely or by accident.

This is not a new procedure and has been used for many years especially in Europe. John Hunter who practised between 1750 and 1790 seems to have performed a considerable number of replants and implants with apparent success. I feel this to be a worthwhile procedure especially in children between the ages of seven and sixteen years when replacement of lost teeth especially anteriors is sometimes a difficult procedure. Since the advent of the automobile and the changes in the rules of some sports, such as hockey, where more bodily contact is allowed, loss of teeth especially the anteriors seems to be more prevalent.

Every dentist whose practice is made up of even a small percentage of children should be acquainted with the procedure of reimplanting lost teeth. The percentage of success with this procedure depends on the time element involved between the time of the accident and the replantation by the dentist thus placing it in the category of an emergency.

The length of time a replanted tooth will be maintained in the arch varies, as the root eventually resorbs, leaving only the crown but many have been maintained for a period of ten years. This resorption may be overcome by making a preparation on the apical end with a shoulder similar to a jacket crown preparation and casting a vitalium thimble and cementing it on the root. I do not believe sufficient work has been done on this technique to warrant its full acceptance.

CASE REPORT

A boy of 14 years of age sustained an injury while playing hockey, and presented himself at my office with both maxillary central incisors completely removed without fracture of the teeth or alveoli. When done immediately novocaine is not always indicated or necessary. Clot was removed from sockets, teeth cleaned and sterilized using zepheran chloride and then alcohol, replaced in sockets, radio-

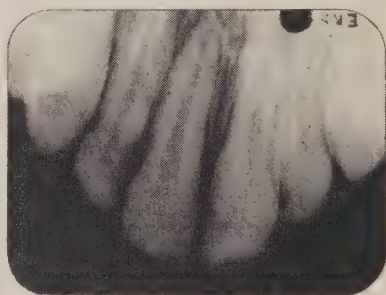


Figure 1.

graphs taken, (Fig. I) to check position, and then bite and alginate impressions taken. Teeth were then removed, root canals opened into, cleaned, filed, and sterilized silver points of the correct size, were selected, sealed in canal and point which protruded slightly cut off and apex polished. Teeth were again sterilized and positioned in the alveoli and checked with radiographs (Fig II).

An acrylic splint was processed from impression previously taken, trimmed, polished and cemented into position. This splint was constructed so as to cover one tooth on each side of the replanted teeth. These may be held in position by means of wire ligatures rather than a splint. A

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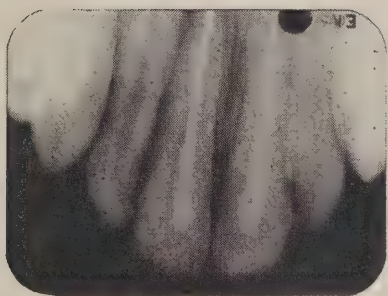


Figure 2.



Figure 3.

careful check was kept on the patient's temperature and patient was seen every-day. If patient shows a noticeable rise in temperature an injection of penicillin is prescribed. In this case penicillin was not necessary. After five days, temporary splint was removed, radiographs and impressions taken and a cast vitallium splint processed and cemented in position for six weeks. When removed, radiographs were again taken (Fig. III) and teeth tested for

mobility, which in this case showed only very slight mobility.

When the above procedure is followed your percentage of success with replantation will be high and you will be rendering a worthwhile and appreciated service to your patient.

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New York, N.Y.

ABSTRACTS

Barium sulphate and antibiotic mixture in pulpotomy.

by WILLIAM F. VIA, Jr., D.D.S., M.S.

Journal of Dentistry for Children, Fourth Quarter 1955.

An experiment has been conducted to test the effect of barium sulphate and a mixture of barium sulphate and polyantibiotic paste on the exposed vital healthy pulp tissue of a cynomolgus monkey. Class V gingival cavities were prepared in four incisor teeth. One was filled with zinc oxide and eugenol cement as a control. One was pulpotomized and the pulp stump capped by dry calcium hydroxide; one was capped with dry barium sulphate, and one with barium sulphate plus polyantibiotic mixture. It was found that both barium sulphate alone and barium sulphate plus polyantibiotic mixture promoted the production of a dentine bridge composed of tubular secondary dentine and resulted in maintaining a healthy vital pulp in the experimental teeth.

Barium sulphate crystals and vacuoles that contain the D200 silicone polyantibiotic mixture were found deep in the pulpal tissue and not surrounded by any inflammatory cells; it might be assumed, therefore, that these two materials are free from any inflammation-producing potential.

Since a secondary dentine bridge was produced using barium sulphate and barium sulphate plus polyantibiotic mixture in this experiment, it would seem that the presence of artificially placed calcium

ions has little to do with the production of secondary dentine.

It has been found that a dentine bridge may be produced by compounds other than calcium hydroxide and that the pulpal tissue responds favourably to a mixture of antibiotics; it would seem logical, therefore, that an experiment should be designed to test the effect of these compounds upon teeth with infected and inflamed pulps. Other non-inflammatory compounds which might be easily utilized as pulp capping material in dentistry should be tested.

Dry barium sulphate placed in direct contact with the pulpal stump of a pulpotomized tooth did not cause damage or produce inflammation in the remaining pulpal tissue in the teeth used in this investigation. A dentine bridge of normal character was produced directly beneath the layer of barium sulphate.

A paste made of Grossman's polyantibiotic mixture plus barium sulphate placed in direct contact with the pulpal stump of a pulpotomized tooth seems to promote the production of a dentine bridge and does not cause inflammation in the remaining pulpal teeth.

Artificially placed calcium ions in contact with the pulpal tissue are not necessary for the production of a secondary dentine bridge in a pulpotomized tooth.

A comparison of the prevailing cell types in saliva of persons with and without periodontal disease.

by SAMUEL DREIZEN, D.D.S., ELLIE JO GILLEY, B.A., and TOM D. SPIES, M.D., Chicago, Ill.
Oral Surgery, Oral Medicine, and Oral Pathology, March 1956.

Periodontal disease (by definition, the destruction of the supporting tissues of the teeth) is associated with an invasion by proteolytic bacteria. The process, essentially inflammatory in nature, is accompanied by a loss of the protective epithelium and by a leukocytosis. The relatively large number of desquamated bacteria-covered epithelial cells and degenerated leukocytes found in the saliva of patients with active periodontal disease, as contrasted with the numbers present in the saliva of patients without periodontal disease, is in accord with the known histopathology of periodontal disturbances.

In approximately 10 per cent of the patients free from periodontal disease, the morphologic features of the salivary cells resembled those seen in samples from patients with active periodontal disease. The state of oral hygiene appeared to be a contributing factor in these cases, since the cell content of saliva was roughly pro-

portional to the presence of accumulations of detritus and materia alba. The latter has been described as the soft, white food debris, mucus, desquamated epithelial cells, and various types of bacteria. It has been noted that patients with exceptionally poor oral hygiene, but with no gingival disturbances, may have the same type of oral flora as patients with chronic periodontal disease.

The principle cytologic features of the endogenous salivary cells in the groups with and without active periodontal disease were similar, if not identical, with those reported for the salivas of caries-immune and caries-susceptible persons, respectively. These findings, together with previously reported evidence of fundamental differences in the chemistry of the tissues and bacteria associated with dental caries and periodontal disease, suggest that these processes are not active in the same part of the same mouth at the same time.

A shoulder preparation and veneered gold jacket for fractured young vital permanent incisors.

by MELVIN A. NOONAN, D.D.S., M.S.
Journal of Dentistry for Children, Fourth Quarter 1955.

One of the greatest problems which faces the dental practitioner is the treatment and restoration of fractured young permanent incisors. Although diagnostic procedures and pulp therapy have ad-

vanced, the types of restorations for fractured young permanent teeth have not progressed to the same degree.

After a three year period of making a shoulder type preparation the author

feels that this preparation can be used on vital young permanent teeth without damaging the pulp and gaining a greater degree of aesthetics with emphasis on durability and retention.

The veneered gold jacket is now being used on fractured permanent incisors.

A shoulder is prepared on three surfaces of the tooth: mesial, labial and distal surfaces. The shoulder on the proximal surfaces can be established by using disks to remove the proper amount of tooth structure. A diamond wheel can then be used to establish the labial shoulder. The labial enamel is removed and the incisal edge is cut back to permit proper alignment of the jacket with the adjacent teeth.

The lingual surface has no shoulder but is freed enough from occlusion to allow for the proper thickness of gold.

The shoulder must be finished with either gingival marginal trimmers or files to give outward bevel and an inward inclination. The shoulder should be finished under the free margin of the gingiva.

The shoulder is approximately 1 mm. in width and follows from mesial across the labial and on the distal surfaces. At the points where the proximal shoulders meet the lingual surface the shoulders become "feather-edged." The lingual surface and incisal edge are relieved for proper occlusion.

A compound impression is taken and a copper plated die is made.

A gold coping is cast which covers the lingual and the two proximal surfaces. On the labial surface at the shoulder a band of gold 1 mm. is wrapped around the tooth. This gold band does not cover the shoulder. At the incisal edge the gold just slightly catches the labial surface. Fine gold wire loops are inserted into the wax pattern and in the finished casting serve as retention loops for the processed acrylic.

Although almost all of the retention is gained from the gold none of it can be seen from the labial surface. It is the acrylic that contacts the labial shoulder. Some gold is seen on the proximal view.

A Study on the Bactericidal Effect of Zinc Oxide Eugenol Cement.

by H. J. TURKHEIM, D.M.D.

The Dental Record, February/March 1955.

Artificially infected, previously sterile slices of human dentine were rendered sterile in vitro within three hours of direct contact with a zinc oxide eugenol cement containing inter alia mercury ammonium chloride and thymol.

The average thickness of these slices was 1.1 mm.

In most cases it was possible, under the same conditions, to sterilize natural decay — obtained from freshly extracted human teeth — by close contact with this cement, within 10 to 20½ hours.

Clinical trials have shown that the vitality of the healthy pulp was preserved. Regular radiological controls not only confirmed these findings, but demonstrated a vital reaction of this organ.

The walls of a carious cavity must be completely freed from caries by the conventional mechanical means. But it should be possible to disinfect, if not even to sterilize the bottom of the cavity rather than risk an exposure of the pulp with all its consequences, provided of course that this organ is clinically healthy at the beginning of the operation.

ETHICS

It has been suggested that the Committee on Ethics prepare a series of short articles to appear in these pages over the next few issues. Subsequent presentations will deal with specific points on Ethics as outlined in the Association's publication "A Guide to Professional Conduct" but it was thought that initially we might devote our attention to some general considerations.

Ethics have been defined as "moral principles", and are determined largely by the customs and practices of society or a group. Such customs and actions as are considered to be right, good, proper and obligatory by the group are considered to be "ethical".

A. M. Allen, Esq., of Great Britain, Secretary of the Chartered Institute of Secretaries of Joint Stock Companies and Other Public Bodies, in outlining the requirements of a profession submits that:

1. There must be a body of knowledge or skill, intellectual in nature, practised in common;
2. There must be a scheme of studies supervised by a governing body;
3. There must be a professional organization to set the standards and to transmit information;
4. There must be integrity and loyalty to clients;
5. There must be a public spirit, as a body, and individually.

We submit that basic to each of these points and of paramount importance, is a high standard of ethics — not only for the organization but for every individual member. The attainment of high standards of intellectual knowledge and skill practised without high ethical standards is likely to be of little real worth. Further, it is of little value to enunciate fine principles unless they are generally applied. The status of a profession is measured more by the manner in which practical knowledge and skill are applied than by the acquisition of particular skills and

knowledge by such a group of individuals. If this is so, then it is somewhat surprising to find so little reference to the subject of Ethics in our professional publications.

It has long been established that the primary duty of service to the public is a fundamental requisite of any profession, but this dictum must be interpreted reasonably to mean that the professional man's interest and responsibility extend beyond the performance of particular preventive and treatment services in the exclusive interest of the particular patient of the moment. More broadly, consideration must be given to additional responsibilities — for dental public health and other community service for which the dentist is suited, and to himself and the community for the personal welfare of his family and himself. To strike a balance between the two seemingly conflicting interests would appear to be the greatest ethical problem facing the professional man. For this dilemma no better guide has been found than the Golden Rule "As you would that men should do to you, do you even so to them". If one were to make a genuine and sincere attempt to follow this principle, then further elaboration of ethical standards would seldom be necessary. On the other hand, the most completely documented code of ethics is of little value unless there is a genuine willingness to fulfil the intent of the code. It is rarely possible to formulate rules of conduct to cover all eventualities, for a clever person can

usually find ways to deviate from the intention. In short, ethics can not be legislated, except to prohibit gross variations from accepted principles of practice. As Aristotle remarked many centuries ago, it takes a good man to know what is good and to recognize what is a moral reason.

In establishing patterns of moral behavior within the profession, frequently it is difficult to draw fine lines of distinction between what is ethically sound and what is not. For example, when does a sign indicating an office location become an advertisement? In one situation such a sign may be completely unnecessary and in another essential. As with so many of our ethical problems, there is no single

regulation which will be equally just for all situations. Some of our societies have found it expedient to set arbitrary limitations, but all must rely upon the inherent good-will of their members to govern their actions in the spirit of the ethical codes established.

• Ethical standards are formed by the ideals and common practices of any group or society. Such principles are the foundation and greatly influence the status of any profession, and without constant vigilance and a genuine effort to adhere to ethical code on the part of every member of the profession, dentistry will never occupy the position of respect and esteem to which it makes claim.

. . . There's Still Time ! !

To register for the Joint Meeting of
**The Canadian Dental Association and
The Alberta Dental Association**

Banff Springs Hotel

June 3-6, 1956

Registration Fee — \$30.00

(Includes ladies' registration)



*See April issue of Journal for programme and
registration form*

EDITORIAL

The dentist and the hospital relationship

The undergraduate curricula of the various Canadian dental schools place great emphasis upon basic science subjects—anatomy, biochemistry, chemistry, histology, pharmacology, and physiology. All schools provide, as well, rudimentary instruction in medicine and surgery. A perusal of the hours spent upon these subjects in a typical dental school will indicate that these sciences are not treated lightly. Two hundred and forty hours are devoted to anatomy; biochemistry receives 94; chemistry 195; histology 180; pharmacology 53; and physiology 138. To these six basic science subjects alone the undergraduate dental student devotes some 896 hours. The subjects of surgery and medicine together consume a total of 82 hours.

To these periods must be added the time spent on oral anatomy, dental pathology and bacteriology, dental radiology, oral surgery and anaesthesia, and all the specific dental subjects. The training in these latter fields, of course, embodies many of the fundamentals of the other basic sciences, and includes as well much which adds to the aforementioned group.

It therefore must be apparent when one graduates from a Faculty of Dentistry he has received a thorough training in basic science subjects and those with broad medical significance. This educational background is recognized everywhere as evidenced by existing legislation permitting dentists to employ such means to render whatever dental treatment may be required by the patient. This includes not only surgical intervention but, as well, the administration of anaesthesia and the pre-

scribing of whatever pharmacological preparations are deemed expedient. Dentists have complete authority to write prescriptions for whatever drugs are required to assist in their responsibility of providing treatment.

There was a time, perhaps, when for some incredible reason, it was thought that the oral cavity was in some way divorced from the rest of the body—that infection in the mouth had no relationship to the remainder of the human host—that treatment rendered in the oral environment did not require the same type of pre-operative and post-operative care that was needed when treatment was performed anywhere else on the body. Fortunately enlightened individuals now realize that the mouth is an integral part of the human organism and as such requires the same conscientious attention as that accorded any other portion of the human anatomy.

In view of this background it is indeed paradoxical that obstacles should be placed in the path of dental practitioners when they attempt to render essential services in hospitals. While Hospital Acts vary somewhat from province to province, they are, by and large, similar in that dentists have no legal status to admit, discharge, prescribe for, or treat hospital patients. It is completely unthinkable that dental care should be denied patients in a hospital, but a strict interpretation of most Acts makes such a denial of treatment from a dentist mandatory. Most enlightened physicians view these particular regulations with more than a little bewilderment.

These regulations make untenable the position of a dentist in a hospital and it is difficult to believe that the intention of the Hospital Acts is to make illegal, dental operations or services in a hospital while the various provincial dental acts make such services and operations completely legal when carried out in the offices of the dentist. Again a strict interpretation of Hospital Acts would affect the legality of a dentist in a hospital administering an anaesthetic, either local or general, performing oral surgical procedures, or inserting fillings and prosthetic restorations. The prescribing of an aspirin tablet for a patient in a hospital by a dentist would also be illegal.

It seems indeed reasonable that any patient admitted to a hospital should receive the benefits of a general physical examination by a physician and therefore admissions should be made to medical service, or under a physician. The treatment and care however of dental patients, should be rendered by a dentist and such services should be his complete responsi-

bility. Certainly there should be close co-operation between the dentist and physician, but this relationship should not extend to the point where the dentist is unable to perform any dental service for which he alone is responsible.

This matter has other ramifications as well because it furthers an improper situation which commonly exists whereby patients who have particular insurance and are cared for by medical surgeons receive the benefit of deriving reimbursement for their operations. For those patients who have similar services rendered by the dentally trained oral surgeon, such reimbursement is denied.

It would be an event of catastrophic proportions if dental services in hospitals were withdrawn. The prospect of such a possibility is virtually unthinkable. Yet the fact remains, if outdated legislation is not altered to permit a dentist to perform in a hospital those services to which he is academically and legally entitled in his own office, the public may well be denied this very vital phase of health service.

The Library

Additions

AMERICAN PUBLIC HEALTH ASSOCIATION: Services for children with cleft lip and cleft palate. 1955. 84 pp.

ASGIS, A. J.: Health education and preventive dentistry in industry. 1955. 62 pp.

BIERMAN, H. R.: Cancer learning in the dental school. 1954. 141 pp. illus.

EASTMAN KODAK CO.: The fundamentals of radiography. 1953. 100 pp. illus.

EGGERT, J., and SCHINZ, H. R.: Introduction à la radiographie. 1953. 226 pp. illus.

GILES, R.: How to retire and enjoy it. 1949. 268 pp.

GUTWIRTH, S. W.: How to free yourself from nervous tension. 1955. 200 pp. illus.

JEFFCOTT, G. F.: United States Army Dental Service in World War II. 1955. 326 pp. illus.

KELLOGG, W. K. FOUNDATION: The first twenty-five years. 1930-1955. 256 pp. illus.

LISCHER, B. E.: Time to tell; a comment on orthodontic orthodoxy and other essays. 1955. 105 pp.

POWELL, H. B.: W. K. Kellogg; a biography. 1956. 358 pp. illus.

SINCLAIR, H. M. ed.: The work of Sir Robert McCarrison; nutrition and health. 1953. 327 pp.

Book Reviews

Pedodontics For The General Practitioner.

By Louis B. Kelsten, D.D.S. Published by Dental Items of Interest Publishing Co. Inc. Pages 396. Price: \$9.75 1st Edition.

Dr. Kelsten's interesting story of paedodontics, tells us that this is a young specialty with deep roots. It is in reality a complex study of all specialties demanding a knowledge of embryology through to prosthodontics. Since many volumes have been written on each phase of dentistry it is therefore extremely ambitious to attempt to compile one book which will be all embracing — a complete reference text. Not only does this seem ambitious but on the surface it would appear to be impossible. In spite of this, the bibliographic references at the end of each chapter indicate that the author has thoroughly screened the literature and masterfully condensed his findings. The result is a fine reference text. If used as such it can achieve two worthy purposes. Primarily, it will avail the reader of an excellent teeing off place from which he can pursue his investigations and secondly it will awaken in him the stark realization of forgotten knowledge. Chapters seven, eight and nine entitled "Embryology of the Jaw and Related Structures", "Physical Growth and Development" and "Endocrines and Growth" could well be entitled "Shock Treatment Chapters" and should stir the reader's conscience and drive him to his library. If other readers sense the same feeling of guilt, bordering on shame, that this reviewer did, because of his diminishing and slim grasp of these academic fundamentals, and is moved to rectify the situation, then this book will exceed its virtuous purposes. No one can reasonably expect this book to agree with every detail of his own thinking and practice conduct and of course this is not one of the aims of such an admirable text. For example the author's "Three Visit Examination Procedure" — his method of acquainting the parents with the child's dental condition and needs — seems unduly elaborate, almost impractical. Yet in his office this has become a tried and true routine. Line drawings and diagrams which can be of such immense

value are not always an outstanding feature in this volume. In some respects this text may have its superiors but in an overall analysis, general practitioners in dentistry should be grateful to the author and welcome his product to their reference libraries.

Edward R. Bilkey.

Applied Orthodontics. By James David McCoy, M.S., D.D.S., F.A.C.D. and Earl Emanuel Shepard, D.D.S., F.A.C.D. Seventh Edition. Published by The MacMillan Co. of Canada Ltd. Pages: 336. Price: \$7.50.

This is the present version of a standard text book first published in 1922. In a sense it might be called a Golden Anniversary publication. Dr. McCoy started his practice in 1906. When a man of his experience has the broadminded grasp of the subject shown in this book it is a pleasure to listen to him. He states that his aim was to produce an introductory text, and as such it is highly recommended. He has brought in Dr. Shepard as collaborator in this edition who has furnished information and drawings to keep things up to date.

The first hundred pages deal with background and the nature of the orthodontic problem. This is followed by a discussion of tissue changes during treatment, and then the problems of diagnosis are dealt with. Over half the book is taken up dealing with these matters before a study of corrective appliances is begun.

The operation of appliances is treated in a general way, with the accent on principles rather than detailed description of an individual appliance or system. However details of appliance construction are not lacking, and there are numerous descriptions of actual cases treated.

This book is recommended for two classes of readers. First for the student who wishes to gain a knowledge of what the science of Orthodontics involves, either for information as a general practitioner or as an aid in deciding to become a specialist. Second for the practising orthodontist, who gets more and more absorbed in the daily task as the years go by, and who needs an opportunity to review his chosen field periodically to keep the various aspects of his work in proper perspective.

A. R. Winn

The Association

ANNUAL MEETING — BANFF

Board of Governors' Meeting

May 30th - June 2nd

Meeting opens at 10.00 a.m. on

Wednesday, May 30th

Convention — June 3rd - 6th



Fluoridation—Metropolitan Toronto Versus Forest Hill Village

In May, 1955, the Metropolitan Toronto City Council approved the fluoridation of the water supply. Metropolitan Toronto is made up of some 13 municipalities. Forest Hill Village, which is one of these municipalities, instituted court action contending that the Metropolitan Council did not have the right to fluoridate the water supply. The case was first heard in October last when Mr. Justice F. G. MacKay dismissed an application made by Forest Hill Village to quash the fluoridation by-law enacted by the Metropolitan Council.

Forest Hill Village appealed to the Supreme Court of Ontario and as a result judgment was handed down by Mr. Justice Pickup on March 19th last. In substance the judgment states that under the wording of the Ontario Public Health Act the Toronto Metropolitan Council does not have the power to put fluoride in the water supply. The judgment states that the "Court is dealing only with the legislative power of the respondent corporation." And further that "It should be noted, however, that these proceedings have no bearing whatever on the merits or demerits on the fluoridation scheme."

This judgment applies only to Metropolitan Toronto and does not have any application to other municipalities in the province. However, it does open the way for similar action to be taken against a

municipal corporation on this matter. Consequently the decision will undoubtedly delay progress on this public health measure until the legal aspect is rectified.

Through the press the Ontario Government has already announced that permissive legislation will be passed as quickly as possible granting permission to municipal corporations to fluoridate water supplies.



Convention Expenses

In presenting the budget on Tuesday evening, March 20th, The Honourable Mr. Harris, Minister of Finance announced that legislation would be introduced to amend the Income Tax Act to permit the deduction of convention expenses. Further he stated that the legislation would provide for the deduction of such expenses incurred during the year 1955.

This result is most gratifying. For several months this matter has been before the courts. Anticipating an unfavourable decision the C.D.A. prepared presentation so as to be in a position to act immediately the court decision became known, if necessary. The unfavourable decision of the Exchequer Court became known at the end of January and immediate effort was instituted with the objective of obtaining an amendment to the Income Tax Act. The Canadian Medical Association acted in a similar manner.

It is presumed that the regulations governing this matter will be the same as those for previous years and returns should be made on that basis pending further information.

No action was taken this year upon the subject of the deductibility of pension payments from taxable income. The Association will continue to work toward this objective.

Brief—Re Convention Expenses.

On March 20th, the Minister of Finance, the Honourable Mr. Walter Harris made the following statement in conjunction with the Budget address:

"Members of the professions and others who have been affected by a recent Exchequer Court decision which ruled out a deduction for convention expenses will doubtless be interested in learning that the act will be amended to allow for 1955 and onward the deduction of expenses for two conventions annually in Canada."

Upon learning the decision of the Exchequer Court, the Association presented the following memorandum to the Minister of Finance respecting Disallowance of Necessary Expenses Incurred by Dentists in Attending Dental Conventions. This memorandum was submitted to the Minister on February 17th.

On behalf of 5,300 dentists practising in Canada, the Canadian Dental Association submits the following resolution passed at the last Annual Meeting of this Association.

"Whereas, dentistry is essentially a health profession, and

Whereas, it is important to build, promote and maintain such health organizations in Canada, and

Whereas, serious study to the problem of dental health is producing rapid advances through accepted methods of procedure, and

Whereas, most of these advances first appear at dental conventions through the presentation of scientific papers, the demonstration by noted clinicians of the proper use of available materials, and

Whereas, attendance at said convention enables the dentist to keep in touch with the latest developments both in technique and equipment, thus enabling him to render a superior service to the public, and

Whereas, Canadian dentists are widely distributed geographically, thereby entailing considerable expense for attendance, and

Whereas, such attendance results in improved health service to the public, and

Whereas, this attendance provides occasion to discuss with his fellow dentists what

may be most practicable to him, thereby enabling him to increase his financial return, therefore be it

Resolved that the Department of Finance be requested to continue the allowance of deductions of legitimate expenses for attending specified conventions."

The submission of this resolution was delayed until the outcome of the recent case on this subject before the Exchequer Court was known. We respectfully submit that the position of dentists, as compared to employed individuals, under the decision of the Exchequer Court is unfair. In the interests of the advancement of scientific knowledge, from which the public obtain the benefit, we seek early amendment to the Income Tax Act in order to rectify this matter. We need hardly point out that this reversal will seriously affect attendance at Conventions.

It is our sincere hope that this matter may have your serious consideration.

R. R. McIntyre, D.D.S.,
President

Don. W. Gullett, D.D.S.,
Secretary

17 February, 1956.

News Item

As representatives of the Canadian Dental Association, President-elect K. M. Johnson and D. M. Tanner, Chairman of Hospital Dental Services Committee attended the indoctrination course given at the Civilian Defence College, Arnprior, March 5-8.

Centennial of Michigan State Dental Association

The centennial celebration of the Michigan State Dental Association was held April 15th to 19th at Detroit. This Association possesses a complete set of minutes for its 100 years of existence. Such record of continuous activity is remarkable. Congratulations to Michigan.

Economic Security

Succession Duty

by W. D. BLAIR, Q.C.,* Director, Succession Duty Office, Province of Ontario.

PART I

Under existing fiscal arrangements, succession duties are levied by the Government of Canada and by two of the Provinces, Ontario and Quebec, the other Provinces having rented this field of taxation to the Dominion. In order to avoid double taxation the Dominion Act provides that where duty is paid to a Province an allowance shall be made from the duty paid to the Dominion of the lesser of the amount of duty paid to the Province or one-half the Dominion duty. The Dominion rates of duty roughly speaking are about double the Provincial rates.

Under the Dominion Act an estate becomes dutiable only when it exceeds \$50,000.00. In Ontario this limit applies in the case of "preferred" beneficiaries a class which includes members of the immediate family and some others. In the case of collateral beneficiaries in Ontario, their shares become dutiable when the estate exceeds \$10,000.00, and in the case of strangers in blood, when the estate exceeds \$5,000.00. It should be noted that in the case of succession duty, unlike income tax, once the exempt limit is passed the tax applies to the whole of the property, and not merely to the excess over the exempt limit. Thus for example if an estate is valued at \$60,000.00, tax is levied on the full \$60,000.00 and not merely on \$10,000.00, which would be the excess over \$50,000.00.

Succession Duty extends to and is levied on extensive classes of property in addition to that which a man may own at the time of his death or which are usually thought of as comprising his estate proper. The principal classes are property held in the names of the deceased

and another jointly, insurance and annuities, and a wide classification of gifts, the latter however being subject to the exemptions which are mentioned later. Property held jointly is taxable to the extent that the deceased contributed to it. Thus if the deceased and another purchase a piece of property for \$6,000.00 and the deceased contributes \$2,000.00 of the purchase price and the surviving joint tenant \$4,000.00, only one-third of the value of the property at the date of the death will be taxed. Insurance upon the life of the deceased if he paid the premiums, is taxable whether payable to the estate, or to a named beneficiary.

Where insurance is payable in a single lump sum payment, it is of course valued and included in the estate at the amount of that payment. Where, however, the insurance is payable, under the terms of the policy or of a settlement option, other than in a lump sum, it will be valued by reference to the terms of the settlement according to prescribed interest and mortality tables. Thus, for example, if the insurance is to provide payments of a fixed amount per month or other periodic payments to the widow for life and for a guaranteed period, followed by payment of a lump sum to children, the widow's interest will be determined taking into account her life expectancy and the length of the guaranteed period. The value of the payment to be made to the children will also depend on the value of the widow's prior interest. There are, of course, numerous forms and terms of payment for insurance in use today but the basic principles indicated apply to all of them. Annuities properly so-called are also valued in a similar manner.

A question often asked in connection with insurance is what is the effect of a wife purchasing insurance on the life of

*Mr. Blair is a recognized authority on Succession Duties and was selected by the Law Society of Upper Canada to write this article. Ed.

her husband. Here, as in so many tax questions it is difficult to give an answer of general application and the exact circumstances of the particular case must be considered. However, it may be said that it would not be necessary for the wife in all cases to establish that she had paid the premiums with funds derived from a source entirely independent from her husband, in order to have the insurance excluded from his estate. For example, if the wife paid the premiums from funds given to her by the husband say some years before and which were given to her by way of outright gift with no conditions attached it is difficult to see how it could be said that the husband had paid the premiums or had kept up the policy. On the other hand, payments of money to the wife by the husband might be so closely connected with the payment of premiums by such factors as amount, the proximity in time to the premium date, intention of the parties and other factors as to make it difficult to establish that it was not in reality the husband who was in fact paying the premiums and maintaining the policy.

A point which might be of particular interest in this series is the value which would be placed upon a dental practice. Basically speaking, the practice would be valued at the amount of the tangible assets, that is to say the physical assets such as equipment and also the amount of accounts receivable. Experience shows, however, that in some cases which are not the general rule, a practice may be sold for an amount indicating a value in excess of the tangible assets. In such cases the practice would be valued at the amount realized on the sale.

The subject of gifts made during the lifetime possibly deserves some separate comment, although it is not possible to deal with it exhaustively within the compass of this article. All gifts made within three years of death in the case of the Dominion and within five years of death in the case of Ontario, are taxed. Gifts made beyond these periods may be exempt

if made outright and without reservation to the maker of the gift or the retention of any benefit to him. The principal conditions for exemption are similar in the Dominion and the Ontario Acts and it may be well to set them out. They are that actual and bona fide possession and enjoyment of the property be assumed by the donee or by a trustee for the donee, beyond the periods of three or five years which have been mentioned, and thence forward retained to the entire exclusion of the donor or of any benefit to him, whether voluntary or by contract or otherwise.

In most cases if the gift is of a simple nature say of cash or of securities such as bonds, no question will arise under these provisions. In practice, however, many cases are met, especially where close relatives or members of the family are concerned, where the facts are not always clear and it is difficult to decide whether the conditions for exemption have been met. Again in the case of certain gifts, for example, gifts to minor children, it may not be possible or desirable to make a gift by way of a simple transfer to the donee. The result is that these exempting provisions and similar provisions in other statutes have been the subject of much litigation. It is suggested, therefore, that if gifts of a substantial amount are contemplated, careful consideration should be given to the method of making the gift in order that the intention of the donor may not be defeated. It should be noted also that these exempting provisions do not apply to property which is held jointly at the time of the death, even though the deceased may have made a gift of a joint interest in the property to the other joint owner.

Both the Dominion and the Ontario Acts provide for exemption of gifts, either made by Will or during lifetime to charitable organizations. The Ontario Act extends this exemption also to educational and religious organizations. The Ontario exemption is completely in favor of chari-

ties which carry on their work solely in Ontario and in favor of educational and religious organizations which carry on their work solely in Canada. Where re-

ligious, charitable or educational organizations carry on their work beyond Ontario or Canada as the case may be there is partial exemption.

General News

Dr. Lee Roy Main, dean of St. Louis University School of Dentistry, was installed as president of the American Association of Dental Schools at the close of its annual meeting March 28 in St. Louis. **Dr. Roy G. Ellis**, dean of the faculty of dentistry at the University of Toronto, was named president-elect, and Dr. William H. Crawford, dean of the School of Dentistry at the University of Minnesota in Minneapolis, was chosen vice-president. During the four-day meeting, the A.A.D.S. also adopted resolutions strongly urging Congress to give increased support to dental research, both through grants and through the establishment of a separate building for the National Institute of Dental Research. A special assessment of \$375 for each dental school also was voted for the establishment of an A.A.D.S. central office with a full-time secretary.

A.D.A. News Letter, April 2, 1956.

More than 22 million persons in 1,127 communities were routinely drinking fluoridated water, the Council on Dental Health of the **American Dental Association** reported as the second decade in the history of the public health measure began this January on the North American continent. Last year saw the completion of three ten-year studies — at Grand Rapids, Michigan; at Newburgh, N.Y., and at Brantford, Ontario, — and the recording of additional indisputable evidence to support the safety and efficacy of the procedure.

"What was a hope of a decade ago is now a truism of preventive dentistry," Dr. H.

Trendley Dean observed in an article on a decade of fluoridation in the three communities published in the January issue of *The Journal of the American Dental Association*. Dr. Dean is secretary of the Association's Council on Dental Research and was a pioneer in the field of fluoridation.

Dental Health Highlights,
January 13, 1956.

Dr. S. Leonard Rosenthal, President of the **American Academy of Dental Medicine**, announces the following appointments to the incorporated American Board of Oral Medicine:

Drs. Samuel Charles Miller, Chairman; Lester W. Burket, Secretary; Hermann Becks; Harold Gelhaar; Irving Glickman; Joseph F. Volker.

The University of St. Andrew's Dental Students' Society has paid a tribute to **Dr. J. Menzies Campbell** by electing him to its roll of Honorary Members, in recognition of his work as a dental historian. Honorary members already include The Master of Queen's College (Professor D. Rutherford Dow), The Dean of the Dental School (Professor A. D. Hitchin), Professor W. J. Tulloch and Major-General D. N. Wimberley.

Dr. Menzies Campbell has, also, been invited to address this Society in April, 1956. As it will then be fifty years since he began his dental pupilage, he has chosen as an appropriate subject—50 Years in Dentistry.

The Provinces

Quebec

The monthly meeting of the **Montreal Dental Club** was held in the Queens Hotel on Monday, March 19th. The meeting consisted of three short papers.

The first of these was delivered by Dr. K. I. Melville, Professor of Pharmacology at McGill University, who spoke on "The Current Trend in Antibiotics". Dr. Melville stated that prior to 1935 there was no suitable treatment for infections. Penicillin was one of the first to be developed, and is still the most potent and probably most widely used. Originally it was fast acting and of short duration, today it is of much longer duration. He stressed that penicillin is less effective orally, than intermuscularly.

All antibiotics must be given while bacteria are multiplying, to be effective, as they interfere with this process.

Dr. Melville said that the development of resistant strains, particularly "staph" and "strep" to penicillin led to the newer antibiotics, aureomycin, etc. These newer developments have wider spectrums but are less effective on each separate organism. On the credit side, some such as aureomycin are just as effective orally as when injected.

As to sensitivity, Dr. Melville felt that caution should be employed when a patient has had previous injections, particularly penicillin. Topical or local applications seem to produce it much more rapidly than intermuscularly.

Dr. J. McCarthy, a member of the club, and well known Montreal oral surgeon, spoke on "Office Emergencies in Dentistry". Dr. McCarthy felt that prevention, as much as possible, was of prime importance. By charting and questioning patients as to health, age, previous experiences, etc., many pitfalls could be avoided, especially with diabetics, cardiacs, etc. He divided his treatments to three classes:

1. *Mild Reactions* — syncope and mild shock can be prevented by pre-medication, keeping instruments out of sight, by not alarming patients and by adequate ventilation in office.

Treatment:

1. Lay patient flat — lift legs
2. Loosen tie, etc.
3. Inhale ammonia
4. Leave for 10 minutes before continuing with damp cloth on forehead.

2. *Severe Reactions* — fortunately rare.

Keep list of telephone numbers of physicians, nearest hospital. Oxygen, if not present in office can be obtained from Hydro-Quebec or fire department. Drugs should be handy but only administered by M.D. Artificial respiration can be used until oxygen present. The main reactions are circulatory and respiratory.

3. *Convulsive* — due to intravenous injection of anaesthetic. Treat as for mild and severe reactions with free airway.

Dr. C. Asselin — Orthodontist — spoke on "What is expected of a dentist in event of an Atomic Attack?" He stated that such an attack would be swift with little warning. A large number of medical centers and personnel would be wiped out. Dentists with very little extra training could be of great aid to the injured. In the field they could dress wounds, treat shock, fractures, etc. In the hospitals they could work on a maxillo-facial team, do emergency extractions, etc.

The meeting closed with a question period.

D. J. M.

Dr. F. Cyril James, principal and vice chancellor of McGill University, announced recently the appointment of **Dr. James McCutcheon** as dean of the University's Faculty of Dentistry. Dr. McCutcheon has been acting dean during the current scholastic year and his appointment takes effect immediately.

Born in Elizabeth, New Jersey, Dr. McCutcheon attended Stanstead Wesleyan College in this province and received his B.A. and D.D.S. from McGill. In 1945 he was awarded the College of Dental Surgeons' Prize for the highest standing in his year and also the Montreal Dental Club Gold Medal.

He served with the United States Navy from 1945 to 1946 and later did postgraduate work at the University of Michigan Graduate School of Dentistry.

Dr. Arthur L. Walsh, professor emeritus of dental surgery and former dean of the Faculty of Dentistry, McGill University, has been elected Fellow in Dental Surgery of the Royal College of Surgeons, England. The honor will be conferred upon him this summer in London. Dr. Walsh is a Fellow of the American College of Dentists and the International College of Dentists.



Photo—LeRoy Toll

DR. HARVEY MILBURN

President, Academy of Dentistry, Toronto

Ontario

All's well that ends well. So ended the current program year of the **Academy of Dentistry, Toronto**. On Thursday, March 22nd, 1956, in Osler Hall, many Academy members gathered for the terminal and climactic meeting. Presiding was Dr. J. Bevan King who introduced the three Academy member essayists. They were Gordon Nikiforuk, D.D.S., M.S., J. B. Macdonald, D.D.S., Ph.D., and D. H. Jenkins, D.D.S., M.Sc.D. Each man guided by the principle of never saying in one thousand words that which can better be stated in one hundred words, in turn presented concise and genuinely helpful papers. Dr. Nikiforuk clearly revealed the highlights of the Vipeholm Study — a Swedish study on the cariogenicity of diet. Various carbohydrate substances were assessed with particular heed to their comparative consistencies. The study further confirmed that carbohydrate substances (some much more than others) are a strong factor in the production of dental caries. Dr. Macdonald in a paper "Recent Findings In The Etiology Of Periodontal Disease" assiduously readjusted current no-

tions regarding this specialty. It was learned that present evidence indicates that bacteria are the central mechanism in periodontal disease as in dental caries. Further, it was revealed that the metabolites of bacteria (such as hyaluronidase) are the chemical determinants by which bacteria may produce periodontal disease. Dr. Jenkins neatly classified the main causes of malocclusion. Basically it was shown that abnormal jaw and tooth relationship resulting from genetic factors are the chief culprits. These are often further complicated by environmental influences such as habits, premature tooth loss, faulty restorations and many others.

It is earnestly hoped that this Journal will be privileged to publish these papers in detail in subsequent issues. The speakers were thanked by Dr. James Bigelow. There followed a short business session which resulted in a unanimous vote in favour of acceptance of the reasonable revisions proposed for the Academy Constitution. Dr. King then introduced the in-coming president, Dr. Harvey Milburn, who in turn presented the 1956 slate of officers for the Academy as follows:

Past President—Dr. J. Bevan King

President—Dr. Harvey Milburn

President-Elect—Dr. Robt. W. Marshall

Secretary—Dr. Wm. A. Weir

Treasurer—Dr. James A. Bigelow

Councillors:

North Toronto Dental Association—
Dr. A. E. Histrop

Toronto West Dental Association—
Dr. Wm. V. Macdonald

Toronto East Dental Association—
Dr. V. A. Herron

Toronto Central Dental Association—
Dr. W. G. Woods

Toronto Downtown Dental Association
—Dr. Evan Nanos

The immediate past president, Dr. James Smith, invested Dr. J. Bevan King with his Past President's Button and officially welcomed him to this group. The meeting was then adjourned. Light refreshments were served.

E. R. B.

Dr. W. D. Bryce was elected president of the **Ottawa Dental Society** recently. Others on the new executive include: past president, Dr. Abram Slone; vice-president, Dr. Bruce Squires; secretary-treasurer, Dr. John Callingham; committee, Dr. John McCavour, Dr. Ches Bugden, Dr. J. G. Coupland, Dr. John Earl, Col. I. A. L. Miller, Dr. Howard Young, Dr. Jack Berman.



Photo—J. K. Schram

PAST PRESIDENTS OF THE ACADEMY OF DENTISTRY, TORONTO

Back Row: left to right: Drs. R. S. Woollatt, A. D. A. Mason, H. Colton Bliss, J. Bevan King, Edmund T. Guest, J. W. McDonald, F. Harold Shepherd, Lloyd M. Grose, Elmer J. Henderson, Harvey W. Reid.

Middle Row: left to right: Drs. Henry G. Robb, Fred C. Husband, Charles McLean, Ernest C. Veitch, Edmund A. Grant, Harold A. Swales, John A. Bothwell, Harold R. Skilling.

Front Row: left to right: Drs. E. A. White, John E. Rhind, Mark G. Boyes, W. James Smith, Wm. G. Trelford, Frank Martin, J. Gordon Chalmers, Earl Bancroft.

Absent: Drs. T. R. Marshall, S. A. MacGregor, J. H. Johnson, T. E. C. Butler, W. B. M. Amy, Gordon McLean, S. S. Crouch.

The **Toronto Academy of Dentistry's Past Presidents' Annual Dinner** was held at the Granite Club, Thursday, March 22, 1956.

Of the 32 Past Presidents still living, 26 attended, and Dr. J. B. King, the retiring President, was invested with his Past President button later that evening, making the total number of Past Presidents now 33.

Dr. A. D. A. Mason, former Dean, Faculty of Dentistry, Toronto, was President of the Society in 1911-1912, and his term of office is now the earliest of this group.

This was during the days of the Toronto Dental Society which was formed about the year 1892.

The Academy of Dentistry evolved from the Toronto Dental Society in 1922 when Dr. R. Gordon McLean was President and thus he became the first President of our organization.

This event was considered quite unique in that few organizations can boast of 33 living Past Presidents, most of whom are still actively interested in the organization.

W. J. S.

The second annual Dental-Medical meeting, sponsored by the **London and District Dental Society**, was held in the Hotel London on Wednesday, March 14, 1956. This event brought to a successful conclusion the regular 1955-56 season of meetings held by the Society. Again this year the Dental-Medical meeting was one of the program highlights, providing the dentists of London and district with an opportunity to get to know, in a more informal atmosphere, their medical confreres and providing a further opportunity to improve and cement public relations between the two professions. Each society member is asked to bring a medical friend and this year over 100 were present to hear Dr. E. A. Bartram of London, Specialist in Internal Medicine and Cardiology, present an inspired address on the subject "The Will to Live with Heart Disease." Dr. Bartram combines his vast clinical knowledge with a deep and understanding knowledge of philosophy to give to patients suffering from heart disease freedom from fear and a will to live with their affliction. He



OTTAWA DENTISTS HONOURED

L. to R. — Dr. Abram Slone, President, Ottawa Dental Society; Dr. Sydney Bradley, and Dr. Felix French.

described fear as one of the greatest problems facing the physician attempting to treat patients who have suffered an attack of coronary thrombosis. While there are many new drugs on the market to aid in heart therapy, the chief problem still remains — that of assuring people that after an average attack of thrombosis, followed by a normal recuperation period and subsequent adjustments in their complete routine of daily life, they have about eight chances out of ten of living out their normal life span. These chances for survival, Dr. Bartram observed, are almost the same as anyone's chances when he gets in his car and drives. Dr. Bartram concluded his remarks by quoting an eminent American Cardiologist who spoke recently in Toronto on the subject of "Treatment of Heart Disease": "Man was not born to fear, but to love, power and spirituality."

Head table guests, along with Society President Dr. R. J. Sutherland and other members of the Executive, were Dr. L. B. Hession, President of the London Academy of Medicine, and Dr. C. A. Harris, Medical Officer of Health for the City of London.

The Society is completing another active and successful season of meetings. With a membership of over 80 dentists from London and district, five dinner meetings are held throughout the year. There is also an annual Ladies' Night and the Golf Tournament, being held this year on Thursday, June 21, 1956, at Highland Golf Club.

In November, six members of the Full Denture Section, Detroit Dental Study Club, visited the Society and presented afternoon and evening sessions of table clinics and papers dealing with Complete Denture Prothesis. In December, the Society was host to Dr. Floyd Ostrander, University of Michigan, who presented a paper on "Drug Therapy in Control of Dental Pain."

In January, 1956, the Royal Canadian Dental Corps made available to the Society the services of Lt. Col. I. A. Millar, Commandant, R.C.D.C. School at Ottawa, who spoke on the subject "Haemorrhage Control."

In February, a unique and highly interesting program was presented in the form of a panel discussion. The panel consisted of: Dr. P. G. Anderson, Past-President of the C.D.A., Dr. H. R. Bateman, President of the O.D.A., Dr. D. W. Gullett, Secretary of the C.D.A., Dr. R. R. McIntyre, President of the C.D.A., Dr. R. O. Winn, Board of R.C.D.S., Dr. C. L. Strachan, Board of Governors, O.D.A. and C.D.A., and Dr. R. J. Sutherland, Moderator. The various duties and responsibilities of these organizations were discussed, along with their personnel structure and procedural systems. The Society did indeed feel honoured by the presence of the Professional leaders and much rewarded by the wealth of information which was disseminated to the members.

J. A. G.

The final meeting of the **Ottawa Dental Society** was held in the Banquet Hall of the Chateau Laurier, on Friday, March 16, 1956.

This meeting took the form of a testimonial dinner to two of our most distinguished members, Dr. Sydney Bradley and Dr. Felix French, who are celebrating their 50th year in practice. More than 140 dentists and their ladies sat down to dinner.

Honorary life memberships to the Ottawa Dental Society, and oil paintings were presented to the two members by Dr. I. Hamilton and Dr. A. A. Cameron.

Dr. Don Gullett brought greetings from C.D.A., Dr. R. J. Godfrey spoke on behalf of the Royal College of Dental Surgeons, and Dr. Harry Thomson for the American College of Dental Surgeons of which both these men are members. Much time was spent by these men eulogizing the wonderful contributions that Dr. Bradley and Dr. French have made to their profession. Many telegrams from all over America were read offering their congratulations.

President Abram Slone ably carried out the duties of Master of Ceremonies. Entertainment was provided by Dr. Harris Crowson at the organ and the Hayden Sisters, a vocalist group. Rev. Father French presented the invocation.

At the conclusion of the meeting, the gavel of the president of the society was presented to Dr. Bill Bryce by Dr. Slone. Dr. Bryce in a few well chosen words accepted, and moved a hearty vote of thanks for the splendid work that Dr. Slone had done during the past year.

The committee in charge, Dr. Callingham (Chairman), Dr. Bugden and Dr. J. P. Coupland are to be congratulated for their work in arranging such an enjoyable evening.

A. B. S.

British Columbia

The **Fraser Valley Dental Society** met in the Dell Hotel at Whalley on January 12th with 21 members present.

Dr. Schumacher began a discussion on the high caries rate and prevalence of gingivitis among flour and feed workers, and was asked by the President, Dr. McPhail, to carry out a review of the dental literature on the subject.

Dr. Roy Donaldson introduced the guest speaker of the evening, Dr. Wm. R. Scott, who spoke on Full-Mouth Reconstruction. He stated that in this work, the prime function was to maintain bony structure and gingival health, whereas restoring the coronal portion of the teeth was secondary. Dr. Scott showed many colored slides, as well as several demonstration models of reconstructed mouths, which showed just what could be done to improve apparently hopeless mouth conditions.

At the March meeting held at the Delair Cafe, Abbotsford. Dr. F. A. Mitchell introduced the guest speaker, Dr. Keith Lindsay, of Vancouver, who showed and commented upon an excellent film on "Minor Oral Surgery". The film was taken while Dr. Lindsay was at Ann Arbor, Michigan, taking his postgraduate training.

The spring meeting of the **Kootenay Dental Society** took place at the Crown Point Hotel in Trail on March 3. Twenty-five dentists listened to Dr. Keith Lindsay of Vancouver talk on "Minor Oral Surgery" in the afternoon. After dinner at the hotel, the group adjourned to the home of Dr. Don Sinclair for games and refreshments.

At the business meeting there was considerable discussion about the new ruling on income tax deductions. It was decided that the next meeting would be held in Nelson in the fall. These new officers were elected:

President — Dr. W. N. Fraser, Creston

Vice President — Dr. M. G. Martin, Trail

Secretary-Treasurer — Dr. T. H. Walhovd, Creston.

Dr. John Kuratli, former Professor of Crown and Bridgework at the University of

Oregon, addressed the **Vancouver and District Dental Society** at its April meeting. His afternoon topic was "The Restoration of a Broken-Down Vital Tooth for a Bridge Abutment" and in the evening he gave an illustrated lecture on "The Construction of an Anterior Bridge." Owing to extensive mottling which would be difficult to reproduce, the patient's extracted central was used as the pontic. A space between the centrals necessitated using a loop on the lingual to connect the component parts of the bridge.

Dr. C. R. Bratten, Chairman of the Visual Education Committee, presented a film entitled "Klondike Holiday" between the lectures.

The Society stood in silence in tribute to Dr. Tom Hackett whose death occurred recently.

D. H. M.

Nova Scotia

The regular meeting of the **Halifax County Dental Society** was held in the Nova Scotian Hotel, Halifax, on March 22nd, with the President, Dr. Epstein, in the chair.

The clinical program took the form of a panel discussion on the subject of "The Control of Rampant Caries in Deciduous and Mixed Dentitions." The panel consisted of Dr. L. Archibald, Dr. J. E. Merritt, Dr. Carl Dexter, and Dr. J. P. McGuigan.

The active participation of the members of the Society gave evidence of the lively interest of all present.

H. M. E.

Municipal Affairs Minister Malcolm Paterson recently introduced a bill in the Nova Scotia legislature to give municipalities the right to chemically treat their water supplies.

The amendment to the Municipal Act is apparently designed to permit municipalities to introduce chlorine, fluorine or other purifying agents into drinking water supplies without legislature approval.

Saskatchewan

All of the members of the profession are very pleased to learn that **Dr. Bob Reid** is convalescing very nicely in the University Hospital in Saskatoon. He is having visitors and would appreciate hearing from any of the members.

L. H.

Alberta

The monthly meeting of the **Central Alberta Dental Society** was held at Red Deer, Dr. S. Fleming presiding. Dr. A. White reported in detail upon the recently completed "Dental Health Week" program.

Guests present were: Dr. R. R. McIntyre, president C.D.A.; Dr. A. Rooney, secretary A.D.A.; Dr. A. Lane, Edmonton, and Drs. G. Street and R. Perry of Calgary.

President McIntyre commended the Society's vigorous "Dental Health Week" approach. He then turned to the national scene and was unstinting in his praise of the secretary, Dr. Don W. Gullett. Dr. Rooney further emphasized the fine work done by our national executive.

The guest speaker, Dr. W. Quigley, professor of orthodontics, University of Alberta, was introduced by Dr. D. Deedrick. Dr. Quigley devoted his lecture and slides to the subject of "Oral Habits". He illustrated the effects of continuous pressure on various parts of the body and skull in particular. Thumb sucking and tongue thrusting came under close scrutiny from a physical and psychological standpoint. The speaker offered no easy panacea for these habits in the form of orthodontic appliances; to the contrary, he emphasized that rehabilitation might be unsatisfactory unless there was a return to normal habits.

This viewpoint was further emphasized by the presentation of slides showing the correction of malocclusion without any use of appliances. This phase of patient training was of particular interest to the general practitioner.

Dr. J. Semple, on behalf of the society, complimented Dr. Quigley on his refreshing analysis of this most urgent problem.

M. S. B.

The usual monthly meeting of the **Edmonton and District Dental Society** was held on February 29, as part of the program for Alberta's Third Annual Dental Health Week. The dinner meeting was held at the "Seven Seas", with Pres. Dr. Alan Fee presiding.

Dr. R. A. Rooney paid respects to the memory of Dr. Jamieson, a charter member of the Edmonton and District Dental Society, whose death occurred recently.

Dr. K. Burnham spoke briefly on Alberta's Third Annual Dental Health Week. He outlined the organization for the program for all of Alberta. He stressed the importance of preventive dentistry.

The evening's main program was presented by three speakers from the Faculty of Dentistry, University of Alberta, namely, Drs. K. A. McMurchy, R. V. Blackmore and H. L. Samuels.

The first speaker, Dr. McMurchy, dealt with the histo-pathology in the resorption of teeth. He listed resorption under the categories of

- (a) Spontaneous or intermittent,
- (b) Resorption of unerupted teeth,
- (c) Root resorption.

Dr. Blackmore stressed in particular the different types of granulomas and cysts. The speaker concluded by emphasizing that they are diseases of periodontal tissue primarily, rather than diseases of alveolar bone.

Dr. Samuels emphasized in his address, the histo-pathology of various types of gingival enlargements. He dealt, not only with enlargements due to local conditions, but also tumors due to systemic disturbances.

All the speakers made excellent use of films to illustrate their addresses. Our local society is very fortunate to have such excellent students of dentistry as well as practitioners in our midst.

The evening's program concluded with a short business meeting.

There is no adequate evidence that any of the fluoride dentifrices now being offered to the public is effective in preventing tooth decay. The A.D.A. statement said that the Association believes that all fluoride dentifrices are being marketed prematurely. "It would be a disservice to the dental health of the public," the statement said, "if the promotion of fluoride dentifrices should lead to the misconception that their use is an adequate substitute for the controlled fluoridation of municipal water supplies."

The Corps

A change of commanding officers for 50 Dental Unit R.C.D.C. (M) has been announced by Eastern Command. Lieutenant-Colonel J. E. Merritt, who has been commanding the unit since November 1952, has relinquished command and has been transferred to Eastern Command Dental Advisory Staff. Taking his place as commanding officer of 50 Dental Unit is Lieutenant-Colonel F. C. Fennell, C.D.

Lieutenant-Colonel Merritt began his army service in 1932 with the 48th Highlanders. He attended the University of Toronto from 1937-1943, and served with the COTC, graduating in 1943 as a Doctor of Dental Surgery. Colonel Merritt served with the Canadian Dental Corps from 1942 to

1946, saw service in the United Kingdom, Canada, and North West Europe. He joined the Canadian Army Militia in 1948, assuming command of 50 Dental Unit from Lieutenant-Colonel J. R. Vaughan in November 1952.

Lieutenant-Colonel F. C. Fennell is a graduate of Dalhousie University, and joined the Dal COTC in 1939 while studying dentistry. He served with the Canadian Dental Corps from 1942 to 1946 in Canada and Newfoundland, and graduated as a Doctor of Dental Surgery in 1943. Lieutenant-Colonel Fennell joined 50 Dental Unit in 1948 and was appointed second-in-command in January 1955. He was awarded the Canadian Forces Decoration in December 1955.

In Memoriam

C. J. Fred Jackson — Dr. C. J. Fred Jackson of Winnipeg, Manitoba, passed away on March 14, 1956.

Born in Harriston, Ontario, Dr. Jackson graduated from the Royal College of Dental Surgeons of Ontario in 1905. He moved to Western Canada over 50 years ago and practised at Carberry, Manitoba for some years before coming to Winnipeg in 1912.

During the First World War he served with the Canadian Dental Corps. He was a member of the Rotary Club for many years and was a 32nd degree Mason of the Scottish Rite.

He is survived by his widow, Helen, and two daughters, Mrs. S. D. Milne and Mary.

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Richard John Allison — Dr. Richard John Allison of Kelowna, B.C., passed away on March 14, 1956 at the age of 81 years.

Dr. Allison graduated at Northwestern University, Chicago, in dentistry, in 1902 and practised at Mason City, Iowa, for ten years before moving to Saskatchewan in 1912. During World War I he served with the Canadian Dental Corps with the rank of captain.

He was a member of the Swift Current Elks Lodge for a number of years, serving at one time as Exalted Ruler of the lodge. He and his wife retired in Kelowna five years ago.

Dr. Allison is survived by his wife, Grace, and his daughter, Mrs. Jane Kellermeyer, Glendale, California.

Lewis Mabee — Dr. Lewis Mabee of Goderich, Ontario, passed away on March 18, 1956 at the age of 81 years.

Dr. Mabee was born in Vittoria and was a graduate of the Royal College of Dental Surgeons of Ontario in 1896. He began his practice in Goderich where he continued his work until his retirement four years ago. Dr. Mabee was an Honorary Member of the R.C.D.S.

He was past president of the Huron Dental Society; honorary member of the Ontario Dental Association; member of Maitland Lodge No. 33, A.F. and A.M.; member of Huron Chapter, Royal Arch Masons; member of the Mocha Shrine, London; charter member of Goderich Mene-setung Canoe Club; member of the Octogenarian Club and member of Knox Presbyterian Church.

Recently he was presented with the Masonic jewel for 50 years as a member of Maitland Lodge No. 33.

He is survived by a nephew, Edward A. Mabee, of Toronto.

•
Charles Henrik Nelson — Dr. Charles Henrik Nelson of Calgary died on March 3, 1956 at 79 years of age.

Dr. Nelson was born at Madison, Wis., and came to Cardston in 1910. He later moved to Vulcan in 1914 and to Calgary in 1918 where he practised dentistry. He retired in 1952.

He was predeceased by his wife, Adda, in

1942. Surviving is one daughter, Jeanne, of Calgary.

George A. Chudleigh — Dr. George A. Chudleigh of Halifax passed away on March 30, 1956 at the age of 68 years.

Born in Burlington, Hants Co., Dr. Chudleigh followed the sea in his youth where he obtained his captain's papers at a very early age. Subsequently he attended Patterson Collegiate School, at Horton and Mount Allison Academy and University.

In 1916 Dr. Chudleigh graduated from the Baltimore Dental College and began his practice in association with the late Dr. W. H. S. Gray. He was one of the first dentists in Nova Scotia to pass the examinations of the Provincial Dental Board. In 1918 he established his own office where he remained in active practice until the time of his death.

Dr. Chudleigh's professional appointments included the Presidency of the Halifax Dental Society and the Nova Scotia Dental Association. For many years he acted as head of the Department of Crown and Bridge, in the Faculty of Dentistry, Dalhousie University.

As a director of the Maritime Finance Co. and of the United Security Insurance Co., he was held in high regard by his business associates.

Dr. Chudleigh was a great lover of the out-of-doors. He was a past-president of the Nova Scotia Fish and Game Association, and was regarded as one of the most expert salmon fishermen in the province.

For many years he was Secretary-Treasurer of the Finance Committee of the First Baptist Church. For some time he taught Sunday School and was later made a deacon.

He is survived by his wife, Bertha Maud, and a foster daughter, Pearl (Mrs. Donald Harper) of Sumatra.

Thomas James Hackett — Dr. Thomas James Hackett of Vancouver, B.C., passed away on March 27, 1956 at the age of 55 years.

Dr. Hackett graduated from the Faculty of Dentistry, University of Toronto, in 1925 and practised dentistry in Newmarket, Ontario from then until 1939 when he established a practice in Vancouver. He was a past master of the Masonic Lodge in Newmarket and was an ardent hunter and fisherman.

He was a son of the late Mr. and Mrs. R. J. Hackett. His mother died in Toronto recently.

He leaves his wife in Vancouver, the former Rene Griffith of Weston; a son, Keith, of Trail, B.C.; a daughter, Mrs. Staff Hardy

of North Vancouver; and a brother, Dr. J. E. Hackett of Toronto.

Frederick Bremner Cooper — Dr. Frederick Bremner Cooper of Moose Jaw, Sask., passed away on April 1, 1956 at the age of 55 years.

Born in Moose Jaw, Dr. Cooper graduated from the Royal College of Dental Surgeons of Ontario in 1925. His first practice was in Tugaskie and in 1934 he moved to Moose Jaw.

He was active in athletics during his college days and had participated in university boxing, wrestling and fencing clubs. He was also a member of the Moose Jaw curling club.

Dr. Cooper was keenly interested in historical and archaeological work and had a fine collection of early firearms. He was instrumental in the formation of the museum here and also did research work at the site of the Mortlach midden.

During the Second World War, Dr. Cooper and his brother, Dr. Robert Cooper, served with the Canadian Army Dental Corps. His brother was killed in action in Italy in 1945.

Dr. Cooper was a member of the A.F. and A.M., the Saskatchewan Dental Association and the United Military Institute in Moose Jaw.

Dr. Cooper is survived by his son Jack of Moose Jaw.

Charles Howard MacNutt — Dr. Charles Howard MacNutt of New Glasgow, Nova Scotia passed away on March 1, 1956 at the age of 83.

Dr. MacNutt was born at Port Howe, Cumberland Co., and received his early education there. He studied dentistry in Baltimore, Md., and later took a post-graduate course in Toronto. He practised in Liverpool, North Sydney, Amherst, and Dartmouth, in the last of which he had Dr. Stanford's practice, before coming to New Glasgow, where he had three offices.

Dr. MacNutt was a member of the Masonic lodge in Liverpool, and an honorary member of the City Club, New Glasgow. He was formerly a member of the Bluenose Curling Club, and was most active during the depression days with open kitchens and helping the needy. He was quite active in sports in the community in his earlier days and a zealous supporter. He was a member of the old Caledonia Male Chorus, and for some years a member of the choir of Trinity United Church, to which church he belonged. He retired from active practice about 17 years ago.

He is survived by his widow, the former Helen Gertrude Hillcoat of Amherst, one daughter, Erminie and one son, John.

John Howard W. Moore — Dr. John Howard W. Moore of Lacombe, Alta., passed away on March 6 at the age of 67 years.

Born at Peterboro, Ontario in 1888, Dr. Moore came to Alberta in 1906 and taught school at Bittern and Pidgeon Lakes until 1908. He returned to Toronto and graduated from the R.C.D.S. in 1912, taking up his first practice at Lacombe in the same year. Dr. Moore also practised at Athabasca, Alta., from 1914 to 1916, returning to Lacombe where he practised actively for 40 years. He was associated in later years with Dr. Branch, Dr. S. Martens and finally with Dr. M. Boyce.

Dr. Moore served his community as a member of the town council, as President of the Golf Club and was at one time a member of the Oddfellows and Masons. He operated the Avalon theatre for many years. His greatest enthusiasms were reserved for his dental practice, which he regarded as a hobby as well as a livelihood, and the sport of fishing. He pursued both with a vigour and joy remarkable for his time of life.

Dr. Moore was married to the former Miss Edna Shilleto in 1914. Surviving are his wife, his son, Donald, of Lacombe and daughter, Mary, of Edmonton. Also surviving are his brother, Gordon, and four sisters: Mrs. M. Telford, Miss Gladys Moore, Miss Mabel Moore, all of Peterboro, Ont., and Mrs. W. Stinson of Port Arthur, Ont.

Dr. Moore will be remembered by his friends and patients as a quiet, kindly man with a ready smile and fine sense of humor. He treated all men as his equal, refused service to none and remained modest to the end.

George Noble Howden — Dr. George Noble Howden of Watford, Ontario, died on March 7, 1956 at the age of 77 years.

Born in Wisbeach, Ireland, Dr. Howden came to Canada at an early age. He received his education in Watford and in 1907 graduated from the Royal College of Dental Surgeons of Ontario. He practised dentistry in Watford from 1908 until his retirement in 1954 due to ill health.

Dr. Howden was a past-president of the London Dental Society. He was a 32nd Degree Mason, and was Worshipful Master of Blue Lodge in 1917 and in 1922 was Head of Royal Arch Masons. Dr. Howden took an active interest in municipal affairs and served on the Board of Education for fifteen years.

Surviving Dr. Howden are his wife, the former Harriet Hird, and two daughters, Mrs. H. D. Counter of Chatham, and Mrs. S. E. Merrifield, of London.

Henry George Wilkinson — Dr. Henry George Wilkinson of Hamilton, Ontario passed away on March 8, 1956 in his seventy-second year.

Born in Mount Forest, Ontario, Dr. Wilkinson received his early education at Stratford, Ontario and in 1908 he graduated from the Royal College of Dental Surgeons of Ontario. He first practised in St. Marys, Ontario, moving to Hamilton in 1928 where he practised until the time of his death.

During his life Dr. Wilkinson continued his education by taking post graduate courses in Chicago and Toronto. He was a member of the Hamilton Dental Association. Dr. Wilkinson also belonged to Masonic Lodge No. 493 in St. Marys, the Scottish Rite of London and the Tamahaac Club. He was a member of St. Peter's Anglican Church in Hamilton.

His wife, the former Correy Edna Mulheron, predeceased him in 1951. Surviving are one son, George of Toronto, and five daughters, Margaret and Margery at home, Mrs. N. J. Russell (Jean) of Hamilton, Mrs. J. A. Richardson (Ruth) of St. Marys, Ontario and Mrs. G. F. Mitchell (Georgina) of Toronto.

Alfred John Towne — Dr. Alfred John Towne, aged 53, died suddenly in Vancouver on March 15, 1956.

Born in Northwood, Iowa, Dr. Towne was educated at Moose Jaw College, University of Alberta, and McGill University where he graduated in dentistry in 1927. He practised for three years in Saskatoon before coming to Vancouver where he practised for 25 years.

He was a member of Giza Shrine Temple, and Keystone Lodge, A.F. and A.M.

Dr. Towne is survived by his wife, Edith, a sister, Mrs. Jack Tarbath, Rathwell, Man., and a brother, Dick, of Redwood City, Cal.

Arthur P. Salter — Dr. Arthur P. Salter of Victoria died in St. Joseph's Hospital on March 25 at the age of 72.

Born in Richmond, Ontario, he graduated in 1904 from Pennsylvania Dental College, and practised in Saskatoon from 1910 to 1944 when he moved to Victoria and remained in practice until his illness three months ago.

Dr. Salter was a member of the Confederation and Scottish Rite, A.F. & A.M.

Besides his wife he leaves two sons, Arthur W. in Saskatchewan and Laurence in Victoria; also four grandchildren.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1956	Banff, Alberta	June 3rd-6th
1957	Winnipeg, Manitoba	June 23rd-26th
1958	Montreal, Quebec	Oct. 5th-8th

FUTURE EVENTS

Date	Function	Location	Officer	Address
June 17-21	Berkshire Conference in Oral Pathology and Periodontology	Lennox, Mass.	Tufts University, School of Dental Medicine	136 Harrison Ave., Boston 1, Mass.
June 21-24	American Academy of Dental Medicine Meeting	Detroit	Dr. G. J. Witkin	45 South Broadway, Yonkers 2, N.Y.
June 22	West Toronto Dental Society Golf and Dinner	Islington	Dr. J. R. Glenny	3242 Bloor St. W., Toronto, Ont.
June 27, 28 and 29	Maritime Dental Association Convention	Halifax	Dr. E. F. Dexter	5 Dutch Village Road, Halifax, N.S.
Aug. 30-Sept. 1	Saskatchewan Dental Association Convention	Waskesiu	Dr. G. H. Janzen	11 Knox Block, Prince Albert, Sask.
Oct. 17, 18 and 19	Montreal Dental Club Annual Fall Clinic	Montreal	Dr. Bruce Ward	1414 Drummond St., Montreal, P.Q.
Dec. 3-7	Greater New York Dental Meeting	New York	Dr. R. E. Morse	Room 106A, Hotel Statler, N.Y., N.Y.
Sept. 7-14 1957	Congrès de la Fédération Dentaire Internationale	Rome, Italy	G. H. Leatherman	Secretary, London, England.

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Sept./56 —May/58—half time	Periodontia and Oral Medicine
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For further information: Secretary, Postgraduate Division, New York University College of Dentistry, 209 East 23rd Street, New York 10, N.Y.

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Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

Comment assurer la prophylaxie de la carie dentaire?*

par MICHEL DECHAUME, Paris, France

La prophylaxie de la carie dentaire connaît un regain d'actualité du fait d'une campagne intensive aux U.S.A. en faveur de sa réalisation par la fluoruration de l'eau de boisson. Il est donc important de connaître les éléments du problème pour discuter utilement.

Il y a déjà fort longtemps que des recherches sont en cours. Mais aucune des méthodes préconisées jusqu'à ce jour ne s'est imposée.

C'est que, tout d'abord, la connaissance de l'étiologie est insuffisante pour établir une prophylaxie efficace.

Le rôle des *facteurs locaux*, en particulier des microbes, nous semble secondaire: ils révèlent un trouble trophique préexistant de la dent, comme dans la nécrose des maxillaires après radiothérapie. Mais il n'y a pas de microbe spécifique de la carie.

Le rôle de la *salive* est difficile à élucider. Certains auteurs rapportent

à une grande viscosité de la salive, due à une sympathicotomie, une susceptibilité particulière à la carie. Or, il est aussi logique d'admettre que le trouble sympathique entraîne à la fois une modification du flux salivaire et une altération de la trophicité de la dent, diminuant sa capacité de résistance aux agents externes.

Le rôle de l'*alimentation* est délicat à préciser dans son mécanisme et ses effets:

A.—La consistance des aliments intervient, ce qui justifie le conseil de prendre des aliments obligeant à un effort masticatoire.

B.—Puis, étant donné que parmi les aliments, quelques-uns sont énergétiques (glucides, lipides, protides), les autres protecteurs (minéraux, vitamines) il était logique de penser à la déficience de ces derniers, en particulier du calcium, du phosphore, du fluor.

Si, par la force de l'habitude, le calcium est encore prescrit, tous les auteurs cependant s'accordent à considérer comme un mythe la "décalcification cause de caries" et à reconnaître l'inefficacité de la thérapeutique calcique.

*Conférence présentée à la Société Médicale de Montréal, le 20 mars 1956.

De même l'action du phosphore et des vitamines C et D, qui avait été cautionnée, pour ces dernières avant la guerre par d'importantes statistiques, n'est plus guère retenue.

Seul, le fluor garde tout son crédit. Il tend même actuellement à dominer la question de la prophylaxie de la carie. L'expérience de fluoruration de l'eau se développe aux U.S.A. depuis 1945: ses protagonistes espèrent obtenir un taux de réduction de 65%. Elle est reprise dans d'autres pays.

Il peut paraître déraisonnable, voire tendancieux, de discuter cette action basée au départ sur la constatation d'un fait clinique, puis sur d'importantes statistiques. Mais, comment ne pas être frappé, devant ce problème présenté quelquefois sous une forme exagérément simplifiée, par le nombre d'inconnues non encore dégagées. En particulier:

- 1) Il serait tout d'abord souhaitable qu'une connaissance plus approfondie de l'agent prophylactique utilisé puisse être proposée, car la chimie ionique est encore source de controverses.
- 2) Le fluor, pour parvenir à l'utilisateur, doit être solubilisé, ionisé. Or, pour ne prendre qu'un exemple, dans quelle mesure le fluor ajouté à une eau "calcaire" formerait-il un fluorure de calcium, et quelle proportion de ce dernier sera-t-elle effectivement ionisée? Et les conditions sont très différentes suivant l'origine de l'eau (source, ruissellement, pompage).
- 3) La concentration optima du millionième (1 p.p.m.) peut et doit tenir compte des différences d'absorption d'eau suivant les climats. C'est ainsi qu'aux U.S.A., pour uniformiser la dose quotidienne qu'on estime correcte aux environs d'1 mmg. on fait passer la concentration en fluor de l'eau à Charlotte (North Carolina) de 0, 6 p.p.m. en juillet à 1, 10 en janvier et février. Mais, comment tenir compte des différences individuelles particulièrement sensibles en France? Et Guttorm Toverud fait judicieusement remarquer que les Norvégiens boivent moins d'eau que les Américains.
- 4) L'apport du fluor dans l'alimentation est variable, suivant le régime. Ainsi, en Extrême-Orient, avec le thé vert qui est particulièrement riche en fluor,

certaines peuples font, depuis longtemps sans le savoir, de la prophylaxie contre la carie. Le vin contient également du fluor.

- 5) Il reste encore à préciser la question de l'assimilation, compte tenu de la diversité de l'alimentation et aussi celle de l'accumulation, dont le Pr. Fabre a souligné les dangers. En effet, la marge de sécurité est assez faible entre la dose journalière de 2 à 8 mmg. considérée par H. C. Hodge et F. A. Smith comme responsable "d'une intoxication chronique légère" et la dose recommandée à titre prophylactique, si l'on additionne le fluor contenu dans l'eau de boisson et dans les aliments solides.
- 6) Le mode de fixation du fluor au niveau de la dent est discuté; Cartier lui attribue deux origines différentes:
Le fluor de constitution amené par voie endogène, qui se fixe sur la dentine. Cet apport se fait surtout chez l'enfant, et il n'est pas prouvé que l'adulte continue à fixer sur ses dents du fluor en quantité appréciable.
Le fluor d'absorption, amené par contact direct et non par l'intermédiaire de la salive, qui se fixe au niveau de l'émail, même chez l'adulte pour ses dents évoluées. Les badigeonnages des dents avec des solutions de fluorures, chez l'enfant, sont une application de ce phénomène: ils ont été abandonnés parce que très compliqués. L'eau de boisson, si elle contient du fluor ionisé, peut remplir le rôle de vecteur, compte tenu de la rapidité des phénomènes d'absorption.
- 7) Le mode d'action du fluor, dans la prophylaxie de la carie, est à peu près inconnu. Et il paraît impossible de savoir si, comme l'écrivait récemment McKay, la protection contre la carie obtenue par l'intermédiaire des eaux fluorées pendant la période de calcification des dents est définitive ou si, au contraire, il y a un intérêt quelconque à ce que ces mêmes sujets continuent à boire la même eau toute leur existence.

On ne peut donc s'empêcher d'une certaine réserve, malgré les statistiques impressionnantes, devant les conclusions des recherches sur la prophylaxie de la carie par la fluoruration de l'eau de boisson.

Nous devons aussi constater qu'une fluoruration de l'eau de boisson n'est applicable avec quelques chances de sécurité que dans des villes relativement

importantes. Tout le secteur rural reste en dehors.

Et si le fluor est seulement utile aux enfants, il faudrait rechercher un autre mode d'administration. La prescription de tablettes n'a pas fourni de résultats décisifs. Les bains de bouche, les dentifrices n'ont pas davantage donné de résultats certains; de plus, certaines réserves doivent être faites sur la toxicité éventuelle d'un tel dentifrice s'il vient à être dégluti dans une proportion importante.

C.—La diminution du nombre des caries pendant la période des restrictions liée à l'occupation nous a révélé qu'il fallait aussi tenir compte du *déséquilibre provoqué par l'excès d'aliments énergétiques* (glucides, alcool, viandes . . .). Comme l'ont montré Mme Randoïn et Lecoq, le déséquilibre alimentaire expérimental organique (glucidique, alcoolique, lipidique, protidique. . .) ou minéral se traduit par le développement d'un terrain acidosique qui favorise une intoxication endogène ou exogène ou permet à une avitaminose de se déclarer. Le cadre des maladies par déséquilibre alimentaire est extrêmement vaste: elles s'y classent en deux groupes principaux, selon que dans la genèse de leur apparition prédomine l'alcalose ou l'acidose. Pour ce qui concerne la prophylaxie de la carie dentaire, il faudrait tout d'abord conseiller la restriction des sucres, encore que Guttorm Toverud fasse remarquer que, seul le sucre mangé entre les repas soit dangereux (le sucre pris au moment des repas ne l'étant pas). D'autre part, en raison du rôle bien-faisant d'un régime alcalinisant dans la prophylaxie de la carie, il faudrait donner plus de légumes, moins de viande, moins de conserves, moins d'alcool.

D.—Enfin, l'heureux effet de la régularité des repas sans collation fragmentaire mérite d'être retenu. En conclusion de cet aperçu sur le rôle de l'alimentation il apparaît indispensable: d'assurer à l'enfant, l'adolescent ou l'adulte un régime équilibré à tendance alcalosique, réparti en repas réguliers sans collations intermédiaires: que la nourriture soit bien préparée par la mastication pour être bien digérée, donc bien assimilée: d'éviter les déséquilibres générateurs d'acidose; excès d'alcool, de sucre.

Encore faut-il se demander si l'alimentation ne joue pas un rôle, non seulement dans la période de formation de la dent en assurant sa bonne minéralisation, mais aussi lorsque celle-ci est sur l'arcade pour maintenir son intégrité. Cependant, il est sage de conseiller la surveillance de l'alimentation de la mère pendant la grossesse puis, celle du nourrisson et du jeune enfant pour assurer une bonne formation et une bonne vitalité des tissus dentaires.

Ainsi, il apparaît que le bilan de cette accumulation de travaux est relativement maigre. Ceci ne doit pas nous surprendre: *la pathogénie de la carie dentaire est particulièrement délicate à élucider*, car l'histologie n'est pas capable actuellement de montrer, comme dans une autre maladie, des altérations cellulaires. Nos moyens optiques lumineux électroniques actuels ne nous permettent pas d'apprécier les altérations, inframicroscopiques qui précèdent la carie. Et aujourd'hui, comme Fauchard au XVIII^e siècle, nous pouvons seulement écrire: "La carie des dents est une maladie qui les détruit". Et aujourd'hui comme hier deux conceptions s'affrontent.

La carie est de cause externe: Trois théories sont en présence: théorie chimique (Magitot, Tomes); théorie parasitaire (Ficinus, Robin); théorie chimico-parasitaire (Miller, Galippe et Vignal, Buntin, Boedecker, Gottlieb). On peut les résumer en disant que la carie est due à l'action d'un acide qui est:

- soit introduit en nature dans la bouche par certains aliments, en particulier par les fruits acides (citrons)
- soit produit sur place par la décomposition des débris alimentaires séjournant entre les dents: acide acétique, lactique. . .
- soit produit par des fermentations d'origine microbienne (lactobacille acidophile), ces mêmes microbes ou d'autres colonisant ensuite sur la dentine décalcifiée. L'acide agirait moins sur la substance minérale que sur la trame organique.

Cette conception externe a été reprise d'une façon originale par Eggers Lura qui, tout en admettant que les lésions se font de l'extérieur vers l'intérieur, reconnaît l'influence des causes internes dans

leur développement. D'après lui, la carie n'est pas une lésion de décalcification par un acide, avec disparition des sels inorganiques, mais plutôt une action pathologique enzymatique provoquée par des troubles généraux du métabolisme du phosphore et par une accumulation anormale de phosphatases dans certaines régions suspectes. D'un autre côté Nord a rajeuni la théorie bactérienne: pour lui, les bactéries franchissent la barrière de l'émail par des fissures, atteignent la jonction amélo-dentinaire et la dentine. A un moment, l'émail altéré par sa face profonde se désagrège et s'effondre. Gottlieb fait jouer un rôle primordial à la protéolyse: l'acide intervient secondairement.

La carie est de cause interne: Cette théorie vitaliste est très ancienne. Elle a été défendue par Galien, pour lequel la carie est due à un "trouble nutritif", puis, par A. Paré, Hunter, Fauchard pour qui la carie est une inflammation, une odontite. Elle a été reprise par Retterer, Beretta, Fargin-Fayolle et Rousseau-Decelle partageant cette manière de voir et distinguent:

- 1) des caries de cause primitivement interne, il y a d'abord un trouble trophique de l'odontoblaste, les troubles de l'ivoire et de l'émail sont secondaires et permettent l'envahissement par les microorganismes.
- 2) Des caries de cause externe:
 - les caries de cause uniquement externe sont exceptionnelles, elles s'observent sur des dents dépulpées ou après des fêlures (Chenet)
 - plus habituellement ces caries sont de cause primitivement externe. Cette irritation par l'intermédiaire des fibrilles de Tomes atteint les odontoblastes. Ces derniers, loin de présenter des réactions de défense, deviennent le point de départ d'un processus analogue à celui qui existe dans la carie d'origine interne, ce qui accroît les lésions.

Et, malheureusement, la chirurgie ou médecine dentaire actuelle reste fidèle à la première conception. Elle se maintient hors des cadres de la médecine et la plupart des recherches sont dirigées avec la conviction, sinon la certitude, d'une pathogénie physico-chimique.

Or, comme le disait récemment Ch. Richet: "A côté des lois physico-chimiques qui règlent les rapports des différentes formes de l'Energie entre elles, ou ceux de l'Energie et de la Matière, il est des lois biologiques qui peuvent être en opposition ou en non concordance avec ces lois".

Il est donc capital d'affirmer, ce qui nous paraît une évidence, que la pathologie dentaire ne saurait être séparée de la pathologie générale, pour condamner définitivement cette orientation qui conduit à nier l'intervention d'un facteur interne dans la pathogénie de la carie. A ceux qui devraient s'étonner que les tissus dentaires, les plus durs de l'organisme et les plus indestructibles après la mort, soient si fragiles durant la vie, ne peut-on avancer que c'est bien là le meilleur argument en faveur de l'intervention d'un processus vital dans la pathogénie de la carie?

Rien d'extraordinaire à cela, la dent est bien un organe vivant, composé de deux parties:

—d'une part une matrice organique dont la forme est invariable depuis la formation de la dent jusqu'à sa destruction. C'est un tissu noble qui ne peut réparer une perte de substance. Seul Forshuvud a présenté des observations de greffe dentinaire. L'histologie permet d'assimiler schématiquement cette matrice organique aussi bien dans l'émail que dans la dentine, à un système de "membranes" qui sont autant de voies d'échanges;

—d'autre part, plus ou moins fixées sur ou dans cette matrice organique, des substances minérales dont les mutations à l'intérieur de la dentine et de l'émail ont été prouvées par des expériences réalisées avec du phosphore radioactif. Ces expériences ont montré que, au cours de la vie, la dent n'est pas stable; elle est le siège d'échanges qui se font par voie sanguine et par la salive.

La dent est un phanère, comme les ongles et les poils, bien qu'elle n'ait pas, chez l'homme, leur possibilité de croissance. Nous n'observons pas davantage

sur la dent la desquamation qui existe sur la peau ou les muqueuses. La dent diffère également de l'os en ce qu'elle n'a pas les mêmes possibilités de réparation par ossification (que ce soit dans les fractures ou dans certaines ostéites). La production de dentine secondaire n'est pas un phénomène exactement superposable. De plus, les dents ne constituent pas une réserve de calcium. Dans l'hyperparathyroïdie, la décalcification des dents ne se rencontre pas parallèlement à celle des os. De même dans la maladie d'Albers-Schönberg, les modifications des dents sont dues non à des troubles de la calcification, mais à des troubles circulatoires ou de compression.

Ceci nous conduit à discuter le rôle, dans l'avenir de la dent, de sa formation, de sa calcification. Autrement dit, peut-on espérer qu'une "calcification normale" ou une "calcification perfectionnée" par adjonction de fluor à la diète, puisse mettre l'organe dentaire à l'abri de toute maladie ultérieure? Ce serait là un fait unique dans l'organisme. Aucun individu n'est à l'abri d'une maladie quelle qu'elle soit, parce qu'il s'est développé harmonieusement pendant son enfance. Ceci, bien entendu, ne doit pas empêcher de chercher à obtenir par tous les moyens cette formation normale. D'un autre côté, tous les auteurs s'accordent à reconnaître que chez les enfants rachitiques ou par ailleurs normaux, les dents dysplasiées ne présentent pas plus de caries que les dents normales d'enfants sains en apparence.

Il faudrait donc d'abord, comme nous le disions plus haut, préciser certaines données: l'alimentation a-t-elle une influence immédiate ou retardée sur la constitution de la dent? Cette influence est-elle définitive ou passagère? Sur quelle partie de la dent s'exerce cette action? On conçoit le pas en avant que ferait la prophylaxie de la carie, si ces données nous étaient connues.

Cette conception de la biologie de la dent nous oblige aussi à réviser nos conceptions pathogéniques en pathologie dentaire. Il n'existe aujourd'hui aucun médecin pour soutenir que les maladies de peau sont de cause uniquement externe,

en dehors de l'action des traumatismes, de certains caustiques ou agents physiques. Elles sont, soit des manifestations locales d'une maladie générale, soit des lésions conditionnées par un trouble préalable de l'organisme, une sensibilisation qui permet l'action de la cause externe. Comme vient de le montrer Charpy "L'eczéma ne doit pas être considéré comme une intolérance de la cellule malpighienne, une allergie cellulaire épidermique, mais une allergie exsudative du derme papillaire à manifestations épithéliales. Ceci est démontré par le début de la lésion dans le derme, au niveau des vaisseaux et par l'atteinte toujours secondaire de l'épithélium".

De même, il ne faut plus dans la carie continuer à opposer les deux pathogénies externe et interne. Il faut avec Galien considérer que la carie, ou plutôt le syndrome carie, est une maladie organique, un phénomène vital, mises à part les caries sur dents dépulpées. Toutefois, ce serait une erreur de vouloir expliquer par la même pathogénie toutes les maladies se manifestant par ce syndrome.

Certaines caries débutent manifestement à l'intérieur de la dentine pour effondrer secondairement l'émail. La conception chimico-parasitaire ne leur paraît pas applicable. D'autre part, les mêmes causes externes ne produisent pas des caries chez tous les individus. Il semble bien que l'action de la cause externe ne soit possible qu'à la faveur d'un trouble fonctionnel préalable de l'organisme, d'une sensibilisation. Rien ne nous empêche de penser qu'il existe, dans l'évolution des caries, une première phase réversible de trouble fonctionnel: sous l'influence d'un trouble nerveux de la trophicité, modification humorale de la matrice organique ou diminution de la concentration minérale, tous phénomènes impossibles à caractériser histologiquement. Puis, plus ou moins rapidement se fait une lyse ou une séquestration de la matrice organique qui aboutit à la perte de substance: c'est le stade de la lésion organique irréversible décelable à l'examen anatomo-pathologique. Le degré de l'in-

fection surajoutée au trouble trophique commande les variétés dans l'évolution.

Depuis longtemps Gariot avait pensé à l'influence du système nerveux. Pour Rousseau-Decelle les "troubles de la nutrition" ont une importance capitale. Personnellement je crois le rôle du sympathique essentiel: le syndrome carie est lié à un trouble trophique de l'odontoblaste, soit déclenché par une cause interne, soit consécutif à une irritation externe. L'apparition de ce trouble trophique est, d'autre part, conditionnée par une sympathicotomie constitutionnelle ou acquise. Sur ce trouble trophique se greffe l'infection due à la septicité du milieu buccal. La confirmation du rôle du sympathique peut être trouvée dans les "caries" observées chez les morphinomanes ou après radiothérapie de la région cervicale. Avec Chompret, nous avons observé, en effet, chez les morphinomanes des caries d'un type spécial, dont l'examen histologique mettait en évidence essentiellement des troubles trophiques pulpaire. De même Del Regato, puis Cernéa et Bataille ont apporté des observations de caries d'un type spécial chez des malades ayant subi des séances de radiothérapie sur la région cervicale, alors que les dents elles-mêmes n'ont pas été irradiées: elles ont, à notre avis, beaucoup de points communs avec les précédentes.

Cette pathogénie sympathique permet de comprendre la diminution de fréquence de la carie pendant la guerre et l'occupation, chez les enfants qui avaient un régime alcalosique, puisque Chauchard a affirmé que l'alcalose est dépressive. Cette conception s'accorde avec la grande fréquence de caries chez les adolescents pendant les périodes d'examen ou immédiatement après, alors qu'il semble y avoir chez eux moins une décalcification qu'un surmenage nerveux avec troubles vago-sympathiques. Les soi-disant récidives de caries chez des enfants dont l'état général est excellent trouvent leur seule explication dans ce trouble trophique. D'ailleurs, n'est-il pas fréquent de constater chez ces enfants difficiles à traiter une émotivité marquée et d'autres signes

évidents de troubles vago-sympathiques.

Le rôle des facteurs locaux dans la pathogénie de la carie s'interprète de la même façon. La persistance des aliments dans les espaces interdentaires intervient moins par des fermentations locales que par l'intermédiaire d'un trouble trophique d'origine réflexe déclenché par cette irritation et qui rend la dent vulnérable aux irritations externes. De même l'irritation entretenue par des caries non traitées ou insuffisamment traitées (Reilly a bien montré le rôle du système neuro-végétatif au cours des infections locales) ainsi que celle produite par la poussée de la dent de sagesse, est génératrice de troubles réflexes trophiques, favorables à l'éclosion de nouvelles caries.

C'est également par le sympathique que les troubles basedowiens interviennent dans la pathogénie de la carie.

Au contraire, les caries sont moins fréquentes dans le rachitisme, qui dépendrait d'une alcalinisation des tissus et humeurs de l'organisme par déséquilibre alimentaire.

Csernyei (1950) arrive également à conclure que la carie est due à une perturbation du métabolisme pulpaire, probablement d'origine nerveuse.

C'est à la lumière de ces faits qu'il faut reconsidérer la prophylaxie de la carie, c'est-à-dire l'ensemble des moyens capables de garantir l'individu contre la carie.

Dans le domaine de la *prophylaxie générale*, il faut savoir borner nos prétentions, d'autant que malheureusement la conception qui accorde au sympathique un rôle prépondérant dans la pathogénie ne conduit pas à des directives thérapeutiques précises. Pour Maury Massler, trois méthodes seraient à retenir: restriction hydrocarbonée dans le régime alimentaire (vitamine D et calcium en addition à la diète sont inefficaces); utilisation du fluor qui fait naître de grands espoirs, mais dont la continuité d'action chez l'adulte reste à confirmer et dont la toxicologie est encore imparfaitement connue dans ses effets cumulatifs; hygiène régulière après alimentation. Nous ajoutons, régime alcalinisant, avec repas réguliers

sans collation intermédiaire. Nous pensons aussi qu'il ne suffit pas d'agir sur le métabolisme des substances minérales par simple apport et qu'il est indispensable de contrôler la vitalité de la matrice organique de la dent pour empêcher toute diminution de résistance aux agressions externes.

De toutes façons, ces méthodes de prophylaxie ne peuvent viser à autre chose qu'une protection partielle, laissant la plus large place à la *prophylaxie locale*. Comme le déclarait déjà en 1944 le Collège des Dentistes Américains, dans l'ignorance où nous demeurons de la nature vraie de la carie, le seul moyen pratique que nous possédions pour enrayer ses progrès et restreindre ses dommages demeure le *dépistage* de la lésion à ses stades initiaux et son *traitement précoce*.

Sur le *traitement général curatif*, nous serons brefs. Chez un sujet qui lui est adressé pour des polycaries ou des caries "récidivantes" le médecin ne doit compter ni sur la thérapeutique calcique, ni sur les vitamines, ni sur le fluor. Il doit procéder à un examen général minutieux, puis traiter les troubles organiques décelés, rechercher le déséquilibre alimentaire et le supprimer, surveiller et régulariser le tonus du sympathique. C'est au spécialiste qu'incombe le rôle prépondérant, ce dont il n'a pas toujours conscience. Si les soins dentaires ne sont pas toujours donnés régulièrement aux enfants et si leur efficacité est si faible, sa responsabilité est fortement engagée.

En effet, n'est-il pas décevant à la fin d'une journée de constater qu'un très grand nombre de malades que nous avons soignés, se sont présentés non pour de nouvelles caries, mais pour des complications de caries insuffisamment traitées ou encore pour ce que nous appelons par euphémisme des récidives de caries. Cette inconstance des résultats nous est évidemment commune avec les autres spécialités médicales ou chirurgicales. Mais plutôt que d'en rejeter la responsabilité sur le seul malade, et de nous en décharger sur le médecin, il nous appartient de chercher

à améliorer nos techniques. Elles n'ont plus guère à espérer dans le domaine mécanique, elles doivent au contraire tout demander à la biologie. Elles sont centrées sur l'obturation, c'est-à-dire la prothèse dentaire, et négligent le traitement local proprement médical de la carie. Il faudrait tenir compte du rôle des troubles trophiques qui président à l'évolution de la carie, ce qui nous conduit à nous étonner de trouver, parmi les médicaments utilisés l'acide phénique, le formol . . . Le premier a été abandonné depuis longtemps en chirurgie générale, en raison des gangrènes phéniquées qu'il déclenchait. Quant au formol, il sert de fixateur en anatomie-pathologique et de nombreux auteurs ont démontré ses dangers par irritation du système nerveux. D'autre part, si les antibiotiques ont fait l'objet de nombreux travaux pour vérifier leur efficacité sur les microbes, le problème de leur pénétration dans les tissus dentaires n'est pas encore résolu.

Il serait cependant facile et possible de réaliser de grands progrès dans le traitement local, qu'il s'agisse de dents vivantes ou de dents dépulpées. Pour assurer l'antisepsie à défaut de l'asepsie qui constituerait l'idéal, nous devons respecter deux conditions:

- les antiseptiques ne doivent pas être irritants, car le trijumeau est le nerf le plus réflexogène de l'organisme;
- les antiseptiques doivent pénétrer aussi parfaitement que possible les parois dentinaires.

Au niveau des dents vivantes, l'ozone, qui jouit d'une puissance de diffusion considérable assure une antisepsie efficace et, de plus, exerce une action eutrophique sur les tissus.

Au niveau des dents dépulpées, pour désinfecter les canaux radiculaires, la pénétration de la dentine par l'antiseptique est essentielle à l'efficacité du médicament (au-delà de la dentine le torrent circulatoire assure la défense). La diathermie permet une excellente désinfection, en profondeur, par l'intermédiaire d'une solution de dichloramine T; mais

celle-ci est légèrement irritante. L'ionophorèse réalise aussi cette pénétration, mais sans doute apparaît-elle souvent comme une méthode de facilité alors que son maniement est délicat. L'ozone est également efficace pour les soins des canaux et donne d'excellents résultats entre des mains attentives. L'utilisation des agents physiques permet un gain de temps qui rend socialement possibles des soins radicaux corrects.

Ainsi nous devrions, pour aller du simple au complexe, contrôler, adopter et enseigner les thérapeutiques par les agents physiques, plus spécialement l'ozone pour:

- 1) le traitement préventif et curatif des infections apicales qui ne devraient se

rencontrer qu'à titre de plus en plus exceptionnel.

- 2) Le traitement conservateur de la vitalité pulpaire par coiffage;
- 3) la désinfection de la dentine et le traitement du trouble trophique pulpaire afin de limiter l'excision de la dentine ramollie sur les dents vivantes.

En outre, le dépistage par examens périodiques systématiques et le traitement précoce devraient être instaurés sur une vaste échelle.

Ces directives n'ont d'ailleurs rien de révolutionnaire: ce sont celles qui président à la lutte contre tous les fléaux sociaux. Pour la tuberculose, le cancer, le syphilis tout est mis en oeuvre pour assurer le dépistage, réaliser et améliorer le traitement précoce.

Nouvelles de l'Association

Questions d'impôt sur le revenu

Les mémoires suivants ont été distribués aux membres de la Chambre des Communes.

Aux membres du Parlement

Nous portons à votre connaissance deux projets qui ont été soumis récemment par l'Association dentaire canadienne au Ministre des Finances. Vous remarquerez que l'Association demande d'amender la loi de l'impôt sur le revenu de façon à ce que celle-ci permette:

(1) de déduire du revenu les dépenses nécessaires encourues pour assister à des congrès scientifiques.

(2) de déduire de l'impôt des sommes versées personnellement pour un fonds de retraite.

Nous espérons que vous trouverez justifiées ces demandes faites par des professionnels et que vous leur accorderez votre appui.

Bien à vous,

R. R. McIntyre, D.D.S., président
Don W. Gullett, D.D.S., secrétaire

Mémoire soumis

**au Ministère des Finances au sujet
de la déduction des dépenses encourues par des
dentistes pour assister à des congrès scientifiques.**

Au nom de 5,300 dentistes exerçant au Canada, l'Association dentaire canadienne vous soumet le texte d'une résolution adoptée à la dernière réunion annuelle de l'Association. Avant de vous soumettre cette résolution, nous avons attendu que la Cour d'Echiquier rende son jugement dans une cause ayant trait à cette question.

Nous prétendons respectueusement que la décision de la Cour d'Echiquier est injuste pour les dentistes, si on compare leur sort avec celui des salariés. Au nom du progrès des connaissances scientifiques, dont profite en définitive le public, nous désirons que la loi de l'Impôt sur le Revenu soit amendée pour corriger l'état de fait actuel. Nous sommes convaincus que le changement effectué par le Ministère des Finances aura comme effet de diminuer considérablement le nombre des inscriptions aux Congrès. Nous espérons que vous prendrez notre demande en considération.

R. R. McIntyre, président
Don. W. Gullett, secrétaire

**Mémoire soumis
au Ministère des Finances
au sujet de la déduction du revenu imposable
des paiements à un fonds de retraite**

M. le Ministre:

Principes de base des propositions:

1) En faisant cette demande, nous croyons à juste titre ne pas *exiger* du Gouvernement la reconnaissance d'un nouveau principe; depuis longtemps, la législation touchant l'impôt sur le revenu admet et reconnaît qu'il est juste et désirable, en matière de politique publique, que l'individu, qui a travaillé constamment durant les années les plus productives de sa vie, puisse jouir du fruit de son travail une fois qu'il a cessé sa vie active; et qu'une partie du revenu qu'il a gagné durant ses années de travail lui profite quand il a pris sa retraite.

2) En fait, ce principe joue non seulement pour les personnes qui sont dans le commerce: les employés du service civil, fédéral et provincial, les employés municipaux, les instituteurs et les professeurs, les chercheurs, et les professionnels à salaire, tous bénéficient d'un fonds de retraite.

3) Nous croyons aussi bien reconnue l'application de ce principe tant pour les groupes d'un faible revenu que pour ceux d'un revenu moyen. Dans son application, on n'a jamais fait de discrimination et plusieurs individus qui reçoivent de gros salaires en bénéficient comme les autres.

4) Nous croyons que le gouvernement, en matière de politique publique, désire que le maintien du revenu agisse comme un facteur de stabilité dans l'économie du pays, de façon à ce que la population trouve un gagne-pain et jouisse d'un bien-être raisonnable.

5) Enfin, nous croyons contraire à une saine politique publique que des professionnels, jouissant évidemment de toutes leurs facultés dans la période la plus active de leur vie, soient obligés, pour subvenir à leurs besoins, de continuer à exercer même après la diminution de leur rendement.

Motifs à considérer

6) Nous ne sommes pas sans savoir que d'autres groupements professionnels ont déjà fait des représentations en faveur de la déduction d'un fonds de retraite d'un revenu imposable. Nous croyons devoir nous-mêmes vous faire des représentations urgentes pour les raisons suivantes:

a) Dans le passé, il nous semble que certains aspects de la question n'ont pas été soulignés suffisamment, du moins en ce qui concerne notre profession.

b) Les mémoires précédents soumettaient des formules dont l'application constituerait des en-

nuis pour nos membres et créerait des complications pour le Ministère.

c) Nous croyons que la situation qui est actuellement l'apanage de notre profession ne peut durer beaucoup plus longtemps.

d) Nous croyons que le gouvernement se préoccupe comme nous des lourdes conséquences de cet état de choses.

e) Nous admettons sans difficulté qu'il est des côtés de la question qu'on ne peut régler dans leur entièreté; cependant nous proposons qu'on s'efforce d'étudier les grandes lignes du problème dans un esprit de collaboration et d'entente mutuelle.

Conséquences de la situation présente pour la profession dentaire

7) Les professionnels doivent travailler pour gagner leur vie; ils doivent eux-mêmes accomplir une besogne longue et difficile et, de par la nature même de leurs services, ils ne peuvent confier l'accomplissement de leur travail à un subordonné ou un employé.

Ils sont obligés de ne compter que sur eux-mêmes pour subvenir à leurs besoins et plusieurs d'entre eux doivent, par simple nécessité, continuer à exercer une tâche à un âge où, dans d'autres domaines (où le travailleur paye moins de sa personne) il est convenu de cesser de travailler et de continuer à recevoir le fruit de son travail passé.

8) Les professionnels sont donc sujets à des fluctuations de revenus rendues plus aiguës par des facteurs qui les taxent durement comme classe spéciale de la société:

a) les années où le dentiste fait le plus d'argent sont peu nombreuses et les dernières années de sa pratique l'amènent à un décroissement progressif de ses revenus. (voir appendice A, tableau A).

Le salarié, au contraire, qui a le même revenu que le dentiste, voit son salaire augmenter graduellement avec les années et atteint son maximum généralement à la veille de sa retraite.

b) Les dépenses effectives pour la formation éducationnelle d'un professionnel ne peuvent être capitalisées et dépréciées comme les valeurs capitales d'une entreprise commerciale ou industrielle.

c) Les revenus d'un professionnel s'arrêtent dès qu'il ne peut lui-même continuer à exercer. La plupart des hommes d'affaires peuvent s'en remettre à des employés pour leur travail et ceux-ci continuent à produire des revenus pour des propriétaires et ou les directeurs, dans les cas de retraite ou de maladie.

d) Une pratique professionnelle n'a pas de disponibilité tangible ou de réserve palpable ayant une valeur d'achat et pouvant parer à une situation urgente ou à une prise de retraite.

e) Le dentiste ne peut pas facilement diminuer son activité: il exerce ou n'exerce pas. Et une fois qu'il a pris sa retraite, il éprouve de sérieuses

difficultés à reprendre sa clientèle quand c'est possible, même s'il en a grand besoin.

Difficulté d'économiser

9) La seule chance qu'un professionnel a de parer à une cessation de travail consiste à amasser des économies durant la période de temps où il exerce. Toutefois, les professionnels éprouvent des difficultés de plus en plus grandes à faire des économies. Le relevé complet que nous avons entrepris sur l'économie de notre profession nous révèle que la majorité des dentistes n'ont pu — ou l'étiquette professionnelle les en a empêchés — augmenter leurs honoraires en proportion de l'augmentation des impôts, des frais de scolarité et du coût de la vie. (voir appendice B).

10) Au sujet de la question des impôts, nous lisons dans l'édition la plus récente des "Statistiques d'impôt" du Département du Revenu National les observations suivantes:

a) Chez les individus ayant un revenu entre \$15,000 et \$10,000, le nombre total des contribuables représente trois fois et demie le nombre total des professionnels du Canada.

b) Chez ces mêmes individus, la somme des revenus provenant de "rémunérations et salaires" représente quatorze fois la somme des revenus provenant d'honoraires professionnels.

c) Dans les catégories des revenus plus élevés, les "rémunérations et salaires" se proportionnent aux honoraires professionnels de la façon suivante.

\$10,000 à 15,000	4¼ à 1
15,000 à 20,000	3 à 1
20,000 à 25,000	3 à 1
25,000 à 50,000	3 à 1
50,000 et plus	4 à 1

11) Ces faits montrent clairement que le principe de base mentionné dans le paragraphe 1 justifiant le droit d'étendre les bénéfices des revenus ne s'applique pas seulement à la majorité des contribuables mais lèse une minorité; et cette minorité lésée se rencontre chez ceux dont les revenus sont les plus bas dans chaque catégorie et elle est précisément celle qui peut encaisser cette discrimination avec la plus grande difficulté.

12) Il est à noter que les professionnels ne disposent pas d'autre privilège de faire des économies; en Angleterre, par exemple, ils peuvent déduire de leur revenu imposable une fraction des paiements faits à un plan d'assurance à dotation avec, en plus, l'avantage de retirer ces rentes sans impôt.

13) Les professionnels, à l'encontre des autres groupements d'individus du pays, se voient donc contraints de parer à leurs risques économiques particuliers avec seule-

ment ce qui leur reste une fois qu'ils ont payé de lourdes charges d'impôt. Avec le système actuel, ils doivent ou abaisser leur train de vie à un niveau inférieur à celui de personnes de situation et de moyens comparables, mais d'autres métiers, ou faire face à la vieillesse avec des ressources insuffisantes.

Conséquences de la situation actuelle

Il semble évident que les jeunes gens, qui ont encore la faculté de choisir leur carrière, n'embrasseront pas une profession qui leur réserve des inquiétudes au cours de leur exercice, qui leur offre un train de vie inférieur à celui d'individus dont la situation confère plus de sécurité et qui les force à accepter une baisse notable dans leur façon de vivre, à leur retraite.

15) On peut en trouver la preuve dans la moyenne d'âge des dentistes qui exercent de nos jours, au Canada; cette moyenne d'âge est au-dessus de 50 ans, comme le montrent les rapports des Enquêtes fédérales sur la Santé de 1951.

16) De plus, le nombre de nouveaux dentistes, chaque année, dépasse à peine le nombre des vides créés par la prise de retraite, les morts et les changements de pays. En d'autres termes, la croissance de la profession dentaire n'est pas proportionnée au développement de la nation canadienne et la profession dentaire perd continuellement du terrain malgré son désir de fournir au pays les services dentaires dont il a besoin. Voir appendice C.

17) En plus du problème de recruter des dentistes, l'Association connaît bien ceux qu'éprouvent des membres qui exercent, problèmes qui ont pu être solutionnés qu'avec l'aide charitable de leurs collègues.

Solution suggérée

18) Les professionnels, quand il se rencontrent, discutent des moyens à prendre pour améliorer la situation. Comme solution, ils songent à s'incorporer. Les principes d'étiquette professionnelle exigent qu'on assume une responsabilité personnelle sans limite. Plusieurs professionnels, qui ont étudié la question croient que le gouvernement serait disposé à verser un octroi à ceux qui laisseraient tomber ces principes reconnus d'étiquette. Nous n'en croyons pas un mot et nous sommes persuadés que le gouvernement désire, autant que nous, trouver une solution raisonnable à ce problème.

19) Dans le but de trouver un terrain d'entente pour toutes les opinions susceptibles de régler ce différent d'importance primordiale, d'un façon pratique et satis-

faisante à toutes les parties, nous suggérons la façon suivante d'aborder le problème:

a) L'Association dentaire canadienne (comme tous les autres organismes professionnels du pays) s'apparente à une entreprise industrielle ou commerciale quant aux relations qu'elle entretient avec ses membres, exception faite des rapports "employeur-employé".

b) Ces rapports "employeur-employé" semblent être le seul item dans la loi qui empêche une association professionnelle d'élaborer pour ses membres un système de pension pour eux.

c) En amendant la loi pour permettre aux associations professionnelles dûment incorporées par une loi fédérale ou provinciale, d'organiser, pour leurs membres un système de retraite, comme le font les employeurs pour leurs employés, on réglerait le problème.

d) Seuls les membres bona fide pourraient en profiter.

e) Chaque membre pourrait adhérer volontairement au plan en payant une cotisation qui serait soustraite, chaque année, de son revenu imposable jusqu'au maximum personnel présent.

f) On pourrait offrir un certain choix de plan (probablement huit ou dix) et ce choix ne risquerait pas de compliquer l'administration de ces plans.

g) Les associations se porteraient garantes de ces plans, quant à leur fiducie, leur surveillance et leurs rapports annuels au Ministère.

h) Il n'y a pas de discrimination entre les membres d'une même profession ou entre les professions elles-mêmes.

i) La définition (paragraphe C) précise ceux qui ont droit au plan de retraite et élimine les abus qui pourraient se glisser.

Etude des objections

20) Evidemment, la principale préoccupation du Ministère des Finances consiste à s'approprier des revenus. Mais nous osons dire que:

a) l'impôt est simplement remis à plus tard, la pension retirée devient sujet à l'impôt dans l'avenir.

b) les individus qui profitent actuellement d'un plan de retraite semblable sont plus nombreux et, en moyenne, ont des traitements plus élevés pour les mêmes catégories de revenus.

21) On peut ajouter que ces propositions jouent en défaveur des personnes qui sont leur propre chef et qui ne font pas partie de professions.

Puisque la perfection n'est pas de ce monde, il faut quand même tendre au moindre mal. C'est pourquoi nous disons que:

a) Pour toutes les entreprises où un individu travaille pour lui-même et dans lesquelles il a investi un capital comparable à celui déboursé par un professionnel pour sa formation et pour

installer son bureau, il n'y a pas de loi ou de principe défendant leur incorporation.

b) Ces personnes travaillant pour elles-mêmes ont donc des avantages refusés aux professionnels; elles peuvent opter pour une solution qui leur procure les dégrèvements d'impôt les plus considérables, en faisant jouer des facteurs dont elles ont le choix.

c) Le professionnel n'a pas le choix; il est soit lié par l'éthique professionnelle, soit par la loi: il ne peut s'incorporer.

d) Et de plus, les individus travaillant pour eux-mêmes en dehors d'une profession peuvent compter sur des revenus qui leur viennent de leur entreprise, quand ils sont malades ou quand ils prennent leur retraite et, enfin, les gains de capital qu'ils réalisent avec leur entreprise ne sont pas sujet à l'impôt sur le revenu.

Conclusions

22) Nous espérons que ce mémoire indique clairement que les raisons qui l'ont motivé ne viennent pas du désir de nos membres de payer moins d'impôt. Nous voulons, au contraire, sans compliquer les choses, trouver une solution à un problème sérieux qui confronte notre profession et aussi les autres. Le noeud constitue la reconnaissance du droit que devrait avoir le professionnel de garder une partie de ses revenus pour les années où il ne pourra plus en gagner, comme la grande majorité de ses concitoyens sont autorisés à le faire. Ce problème influence une grande quantité d'intérêts différents et ces intérêts touchant le Gouvernement aussi bien que nous. Nous espérons fermement que le gouvernement collaborera avec nous, comme nous collaborerons avec lui, à la solution de ce problème.

R. R. McIntyre, président
Don W. Gullett, secrétaire

TABLEAU IV

Moyenne du revenu des dentistes en rapport avec l'âge
1953

Age	Total des dentistes	Dentistes travaillant pour eux-mêmes			Dentistes à salaire
		Moyenne du revenu net	Moyenne du revenu brut	Pourcentage du net en rapport avec le brut	
Vide...	5089	5478	10298	53.2	3337
25-29...	5934	6297	12435	50.6	4221
30-34...	7587	7901	15612	50.6	5583
35-39...	9098	9272	17462	53.1	6924
40-44...	8347	8624	16165	53.8	6101
45-49...	8332	8431	16171	52.1	7257
50-54...	8057	8344	16595	50.3	6098
55-59...	7087	7120	12800	55.6	6912
60-64...	6210	6286	11930	52.7	5825
65-69...	4667	4597	12854	35.8	5076
70-74...	3476	3553	8024	44.3	2733
75.....	2519	2519	6449	39.1	—

A.D.C. Enquête sur l'économie de l'exercice dentaire '54.

Appendice B.

Augmentation en pourcentage du coût de la vie
de 1944 à 1953

Moyenne du coût de la vie.....	55	Augmentation en pourcentage 1944-1953
Moyenne du coût de la vie.....		+ 55
nourriture.....		+ 72
logement.....		+ 36
vêtement.....		+ 65
utilités publiques.....		+ 55
autres utilités.....		+ 34
tarifs hospitaliers.....		+ 130
médicaments.....		+ 28

Ces renseignements proviennent du Bureau des Statistiques du Dominion.

Augmentation en pourcentages révélée par l'enquête
sur l'économie de l'exercice dentaire de 1953 en com-
paraison des revenus dentaires pour 1944.

	Augmentation en pourcentage 1944-1953
Honoraires dentaires.....	+44.7
Frais d'administration d'un cabinet dentaire	+63.6

Note: Enquête entreprise par l'Association dentaire canadienne, en 1953.

Enquête entreprise par le Bureau des Statistiques du Dominion, en collaboration avec l'Association dentaire canadienne, en 1944.

Appendice C

Proportion du nombre des dentistes en rapport avec la
population du Canada

Année	Nombre de dentistes par rapport à la population
1938.....	1/2685
1947.....	1/2633
1948.....	1/2735
1949.....	1/2832
1950.....	1/3002
1951.....	1/2819
1952.....	1/2740
1953.....	1/2686
1954.....	1/2790
1955.....	1/2838

Dépenses de Congrès

En présentant son budget, dans la soirée du 20 mars, l'honorable Harris, Ministre des Finances, a annoncé un projet de loi destiné à amender la loi de l'impôt sur le revenu de façon à permettre la déduction des dépenses faites pour assister à un congrès. Il a de plus déclaré que cette loi permettrait de soustraire les dépenses faites au cours de l'année 1955. Il faut se réjouir de cette décision. Durant plusieurs mois, la question était devant les tribunaux. Prévoyant un jugement défavorable, l'A.D.C. avait préparé un

mémoire pour le présenter, si nécessaire, dès que la décision des tribunaux serait connue. Le jugement de la Cour d'Echiquier fut connu à la fin de janvier et aussitôt on entreprit des démarches pour faire amender la loi de l'impôt sur le revenu. L'Association médicale canadienne fit de même.

On croit que les règlements au sujet de cette question seront à peu près les mêmes que ceux des années passées et que les rapports d'impôt doivent être faits de la même manière à moins que le gouvernement indique une autre marche à suivre.

Le Ministère des Finances n'a pas pris de décision au sujet des fonds de retraite. L'Association persistera dans ses demandes.

Fluoruration—Le Grand Toronto contre
le village de Forest Hill

En mai 1955, le Conseil Municipal du Grand Toronto approuvait la fluoruration de l'eau potable. Le Grand Toronto est constitué de 13 municipalités. Le village de Forest Hill, une de ses municipalités constituantes, avait pris une action en Cour contre le Grand Toronto pour lui contester le droit de fluorurer l'eau de l'aqueduc. La cause passa en octobre 1955 et le juge F. G. MacKay débouta le village de Forest Hill de son action en vue d'empêcher Toronto de fluorurer l'eau.

Le village de Forest Hill en appela de ce jugement à la Cour Suprême de l'Ontario et le juge Pickup rendit son jugement le 19 mars. Dans son jugement le juge dit que d'après le texte de la loi de Santé publique de l'Ontario, le Conseil Métropolitain n'a pas le pouvoir d'ajouter du fluor dans l'eau d'aqueduc. On lit dans le jugement: "La Cour ne se préoccupe que de la loi qui donne ses pouvoirs à la corporation en cause." Plus loin: "Il faut noter, toutefois, que ces délibérations ne touchent pas à la question de savoir si la fluoruration est bonne ou mauvaise."

Ce jugement ne concerne que le Grand Toronto et ne touche pas les autres municipalités de la province. Toutefois, il se peut fort bien qu'il suggère des procédures du même genre contre des corporations municipales. Ainsi, ce jugement va sans doute retarder l'application de cette mesure de santé publique jusqu'à ce que son aspect légal soit corrigé.

Le gouvernement d'Ontario a déjà annoncé aux journaux qu'il se propose de passer une loi le plus tôt possible pour permettre aux municipalités de fluorurer leur eau de consommation. La Session actuelle du parlement touche à sa fin, mais il est question qu'on convoque aussitôt une session spéciale.

Centenaire de l'Association dentaire du Michigan

L'Association dentaire du Michigan a célébré le centième anniversaire de sa fondation, à Détroit, du 15 au 19 avril. Cette association possède tous ses procès-verbaux depuis cent ans. Il est admirable qu'une association ait réussi durant aussi longtemps à maintenir son oeuvre sans défaillance.

Nos sincères félicitations.

Nouvelles

—Comme représentants de l'Association dentaire canadienne, les docteurs K. M. Johnson, président-élu de l'Association et D. M. Tanner, président du Comité des Services dentaires hospitaliers, ont assisté aux cours qui se sont donnés au Civilian Defence College, à Arnprior, du 5 au 8 mars.

—Le Conseil, d'Enseignement dentaire s'est réuni au Secrétariat de l'A.D.C., à Toronto, les 23 et 24 avril.

Le Comité d'Etude de l'Assurance-Santé s'est réuni au Secrétariat de l'A.D.C., les 6 et 7 avril.

Congrès annuel à Banff

Réunion du Bureau des Gouverneurs: du 30 mai au 2 juin.

Congrès: du 3 au 6 juin.

Parmi les conférenciers, on note le docteur Arnef Romnes, chef de service de dentisterie opératoire de l'Université Northwestern, de Chicago; le docteur H. M. Worth, expert renommé au Canada en radiologie, de Vancouver; le docteur Sidney T. Williams, du service de prothèse de l'Université Washington, St-Louis Miss.

De plus, des conférenciers et des cliniciens désignés par les sections d'orthodontie et de chirurgie présenteront des travaux; il y aura aussi de nombreuses cliniques de table.

Comme l'hôtel de Banff est situé dans un décor sauvage, certaines chambres ont des vues plus belles que d'autres; c'est pourquoi, le comité d'organisation a décidé, en toute justice, qu'aux mêmes tarifs et pour les mêmes catégories de chambres, qu'il accorderait les plus belles par ordre de demande. On prie ceux qui comptent se rendre dans les Rocheuses de s'adresser au docteur J. A. Duncan, 3047, 25^e rue, S.O. Calgary, Alberta, en joignant le prix de leur inscription au Congrès, soit \$30.00.

Tarif de transport par avion réduit pour le congrès

La Cie aérienne Trans-Canada nous communique ce qui suit:

"Il nous fait plaisir de vous annoncer que nous pouvons accorder un tarif de faveur aux dentistes qui se rendent au Congrès par

groupe. Ceux-ci doivent voyager ensemble dans le même avion pour se rendre à Calgary, mais ils pourront revenir séparément, comme la chose leur convient; pour profiter de ces tarifs de faveur, ils doivent former un groupe d'au moins dix personnes. Le prix d'un billet régulier aller-retour Toronto-Calgary est de \$237.60, tandis que le prix d'un billet de groupe est de \$211.20. On sert des repas à bord, l'équipage n'accepte pas de pourboire et les passagers se rendent à destination sans fatigue."

Pour profiter de ces avantages, on doit faire les démarches dans le centre où on demeure.

Notes sur la fluoruration

—Kapusksing, Ont. (population 4,987): en votant pour ses représentants municipaux, les électeurs ont aussi approuvé la fluoruration. Pour 1,027; contre 353.

—Sillery, Qué. (population 12,800): on a commencé officiellement à fluorurer l'eau de l'aqueduc, le 24 janvier dernier. Le docteur Gustave Ratté, ancien président de l'A.D.C., présidait la cérémonie.

—Port-Arthur, Ont.: le Conseil de Ville a voté en faveur de la fluoruration le 9 janvier (9 contre 1).

—Ottawa, Ont.: le Conseil municipal a approuvé la fluoruration le 19 décembre dernier.

Plan de paiement pour les traitements dentaires commencé en Saskatchewan

L'Association dentaire de la Saskatchewan a organisé un plan de paiements différés pour des traitements reçus dans les cabinets dentaires. Cette organisation est connue sous le nom de Services dentaires de la Saskatchewan. Tous les membres de l'Association peuvent utiliser ce plan, dont les frais d'organisation ont été défrayés par l'Association. Au début, chaque dentiste devra souscrire un certain montant (\$2.00, par mois ou \$20.00, par année) pour couvrir les frais d'administration. On espère que ce montant diminuera graduellement. Le plan est administré sans but lucratif par l'Association pour rendre service au public. Ainsi le public peut recevoir des traitements dentaires et les payer par tempéraments sur une base convenant au budget familial. On ne charge pas d'intérêt sur le solde, quoiqu'on perçoive une petite somme pour l'administration de ce service du patient et du dentiste.

L'Association dentaire de la Saskatchewan est le premier organisme dentaire du Canada à mettre sur pied un plan de ce genre sans but lucratif.

Nombre des étudiants en chirurgie dentaire

Le nombre des étudiants dans les facultés dentaires canadiennes est légèrement plus

élevé que celui de l'an dernier. L'augmentation provient uniquement du fait que l'Université de Montréal compte plus d'élèves. Les quatre autres facultés notent une légère baisse dans le nombre de leurs étudiants, de 1 à 4, ce qui n'est pas bien important.

Il n'y a pas de changement quant à la disponibilité des facultés dentaires; le tableau 2 n'a pas changé depuis plusieurs années et ne variera pas tant que les Universités ne disposeront pas de facilités plus considérables pour l'enseignement.

Il faut noter l'augmentation notable du nombre des femmes aux études dentaires; c'est le plus haut total jamais vu dans les écoles dentaires canadiennes (26, 34%). On peut expliquer cette augmentation surtout par la présence de femmes-dentistes européennes dans les universités plutôt que par l'accroissement d'un intérêt des jeunes filles des écoles secondaires pour la dentisterie.

Les étudiants viennent dans une proportion de 8% de pays étrangers (tableau 5). Trente-neuf viennent des Etats-Unis. Par une étrange coïncidence, l'Association dentaire américaine rapportent que trente-neuf élèves aux études dans les écoles américaines viennent du Canada, au cours de la même année académique. Le tableau 7, indiquant le nombre d'étudiants canadiens inscrits dans des facultés dentaires américaines, se rapporte surtout aux habitants de la Colom-

bie-Britannique. Environ quarante-pour-cent des étudiants en chirurgie dentaire de cette province fréquentent les écoles de la Côte du Pacifique et on peut supposer qu'ils sont de Colombie-Britannique. Si cette supposition est vraie, on peut dire que la proportion des étudiants en chirurgie dentaire en rapport avec la population de la Colombie-Britannique est de 1 par 26,000.

Le nombre des diplômés ne peut dépasser 200, du moins d'ici les quatre prochaines années, comme le montre le tableau 1. Ce nombre demeurera stable jusqu'à ce que les universités aient la possibilité de recevoir un plus grand nombre d'étudiants.

Les chances pour les universités de recevoir un plus grand nombre d'étudiants se sont avérées meilleures, l'an dernier. L'Université Dalhousie a annoncé la construction d'une nouvelle école et celle-ci est commencée depuis mars. L'Université de Toronto a des projets pour un nouvel édifice. L'Université de la Colombie-Britannique a commencé une enquête pour se rendre compte de la nécessité de fonder une faculté de chirurgie dentaire. Ailleurs, on se préoccupe de la question d'augmenter le nombre des élèves, mais ces trois projets sont les seuls qui soient définis. Quand ces projets se sont réalisés, on pourra recevoir environ 125 élèves de plus par année aux études dentaires du Canada.

TABLEAU I

Inscription globale des étudiants dans les facultés dentaires du Canada au 1er janvier 1956

Université	1 ^{ière}	2 ^{ième}	3 ^{ième}	4 ^{ième}	hommes	femmes	Total
Dalhousie.....	12	11	11	13	46	1	47
McGill.....	35	36	31	34	135	1	136
Montréal.....	51	52	37	21	160	1	161
Toronto.....	74	80	78	78	289	21	310
Alberta.....	27	30	28	30	113	2	115
Totaux.....	199	209	185	176	743	26	769

TABLEAU II

Nombre maximum d'étudiants pouvant être acceptés en 1^{ière} année dans les différentes facultés

Dalhousie.....	12
McGill.....	35
Montréal.....	60
Toronto.....	65
Alberta.....	30
Total.....	202

TABLEAU III
Résumé d'inscriptions dans les facultés dentaires du Canada de 1940-1955 (inclusivement)

Faculté	Dalhousie	McGill	Montréal	Toronto	Alberta	Total
1940-41.....	31	58	104	210	51	454
1941-42.....	25	61	118	232	49	485
1942-43.....	25	67	139	270	53	554
1943-44.....	22	67	154	255	24	522
1944-45.....	28	51	162	264	34	539
1945-46.....	27	73	184	180	54	518
1946-47.....	38	111	188	340	108	785
1947-48.....	37	127	208	435	115	922
1948-49.....	41	146	224	478	123	1012
1949-50.....	48	147	225	478	136	1034
1950-51.....	48	145	196	380	114	883
1951-52.....	49	145	140	300	121	755
1952-53.....	50	141	111	294	123	719
1953-54.....	50	142	98	299	118	707
1954-55.....	48	138	130	313	119	748
1955-56.....	47	136	161	310	115	769

TABLEAU IV
Nombre total des diplômés durant les années 1940-1955 (inclusivement)

Faculté	Dalhousie	McGill	Montréal	Toronto	Alberta	Total
1940.....	12	13	23	56	13	117
1941.....	7	18	14	45	13	97
1942.....	8	9	31	40	32	120
1943.....	11	26	18	103	8	166
1944.....	6	12	37	61	24	140
1945.....	8	13	30	58	7	116
1946.....	0	5	41	56	0	102
1947.....	10	18	36	75	10	149
1948.....	9	15	38	24	13	99
1949.....	6	34	45	75	20	180
1950.....	11	36	42	168	49	306
1951.....	12	37	69	152	25	295
1952.....	12	36	55	85	27	215
1953.....	14	34	20	75	35	178
1954.....	14	37	20	69	32	172
1955.....	13	35	19	78	29	174

Pour l'année 1955

	hommes	femmes
Dalhousie.....	12	1
McGill.....	35	0
Montréal.....	18	1
Toronto.....	77	1
Alberta.....	27	2
	<u>169</u>	<u>5</u>

TABEAU V

Distribution des étudiants par provinces et pays étrangers dans les facultés dentaires du Canada au 1er janvier 1956

Faculté	Terre-Neuve	Ile-du-Prince-Edouard	Nouvelle-Ecosse	Nouveau Brunswick	Québec	Ontario	Manitoba	Saskatchewan	Alberta	Colombie-Britannique	Etats-Unis	Indes Occidentales	Bermudes	Afrique	Europe	Australie	Grande-Bretagne	Indes	Total
Dalhousie	9	4	20	9							2	1				1	1		47
McGill	2	1	1	1	60	15	6		1	7	34	5	3						136
Montréal		2		5	145	4	11	1			3								161
Toronto	1	1		1	1	279	6	25		5						1	3	1	310
Alberta							6		56	20		1		1	6				115
Total	12	8	21	16	206	298	24	32	57	32	39	7	3	1	6	2	4	1	769

TABEAU VI

Etudiants supplémentaires

	Dalhousie	McGill	Montréal	Toronto	Alberta	Total
*Etudiants diplômés						
1955-56	0	0	0	10	0	10
**Etudiants post-scolaires						
1955-56	0	0	10	8	0	18
***Etudiants passagers						
1955-56	0	0	0	45	0	45
Hygiénistes aux études durant						
1955-56	0	0	0	20	0	20

*L'expression "étudiants diplômés" signifie les dentistes inscrits à l'Université, dans l'Ecole pour Diplômés, et qui suivent un cours, qui donne droit à un titre.

**L'expression "étudiants post-scolaires" signifie les dentistes inscrits dans une faculté dentaire pour y suivre un cours, qui donne droit à un titre ou à un diplôme.

***L'expression "étudiants passagers" signifie les dentistes inscrits dans une faculté dentaire pour y suivre un cours de courte ou longue durée, ne donnant pas droit à un titre ou à un diplôme.

TABEAU VII

Statistiques au sujet du nombre des étudiants canadiens aux études dans les facultés dentaires du Canada en rapport avec la population de leur province d'origine.

Etudiants venant de	Pourcentage des étudiants	*Proportion des étudiants en rapport avec la population
Terre-Neuve	1.56	1/34,333
Ile-du-Prince-Edouard	1.04	1/13,500
Nouvelle-Ecosse	2.73	1/32,524
Nouveau-Brunswick	2.08	1/34,875
Québec	26.79	1/21,942
Ontario	38.75	1/17,393
Manitoba	3.12	1/35,375
Saskatchewan	4.16	1/27,781
Alberta	7.41	1/18,702
Colombie-Britannique	4.16	1/40,781
Canada		1/20,287

*Les chiffres des populations sont ceux fournis par le Bureau des Statistiques d'Ottawa pour le 1er juin 1955.

Note: Environ 40 étudiants canadiens font leurs études aux Etats-Unis, chaque année; comme on ne peut connaître leur province d'origine, il est donc impossible de les inclure dans ce tableau.

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Ideas for problem upper dentures

by WILFRID D. CLARK, D.D.S., Hamilton, Ontario.

Occasionally, a single full upper denture can be puzzling. The problem is often one of poor retention. The denture drops in speech or during mastication. In spite of rebasing and other attempts at correction, the patient is unhappy and the operator frustrated. As in all dentistry, occlusion is usually the key.

The full upper denture that occludes a full lower denture has its occlusal pattern chosen by the operator's estimate of the most advantageous positions and relationships. The orientation of the occlusal plane, compensating curves, location of balancing points and many other factors are largely matters of calculated choice.

On the other hand, the single full upper denture against natural lowers must meet an occlusal alignment that is sometimes quite unfavourable. The difficulties presented by the occlusal pattern of the natural lower teeth should be recognized and modified where possible.

SELECTION AND CORRECTION

The ideal lower occlusal surface would be flat in all directions and without interfering cusps. It is sometimes possible to approach this goal through the principle of "selection and correction". Select the most favourable posterior teeth and the parts of other posteriors which by modification can be made acceptable. All other posterior teeth must be kept out of occlusion. Corrections are made on molars and bicuspid that are tilted out of position or that have prominent cusps. Lower anteriors which have become sufficiently elongated to make anterior clearance difficult are very conservatively reduced in height.

OCCUSAL PLAN

The occlusion should be planned so that all contacts in function force the upper denture firmly against the tissues underlying it without causing denture-shift anteriorly or laterally.

A fixed bridge or two, where necessary, or a partial lower denture, will often allow us to rearrange the occlusion to suit our best purposes. There are times when this is not economically feasible. It is still possible to have a fair result in most cases provided there is at least a bicuspid or two and one molar present on each side.

MODIFYING THE OCCLUSION

The first step in modifying the lower occlusion consists of taking an impression of the lowers and pouring a study cast. This should be viewed from the sides. It will often show that the tilted molars, and more particularly their prominent distal cusps, will have to be ground to allow them to deliver a direct upward thrust in function. Prominent cusps on bicuspid must be considered also.

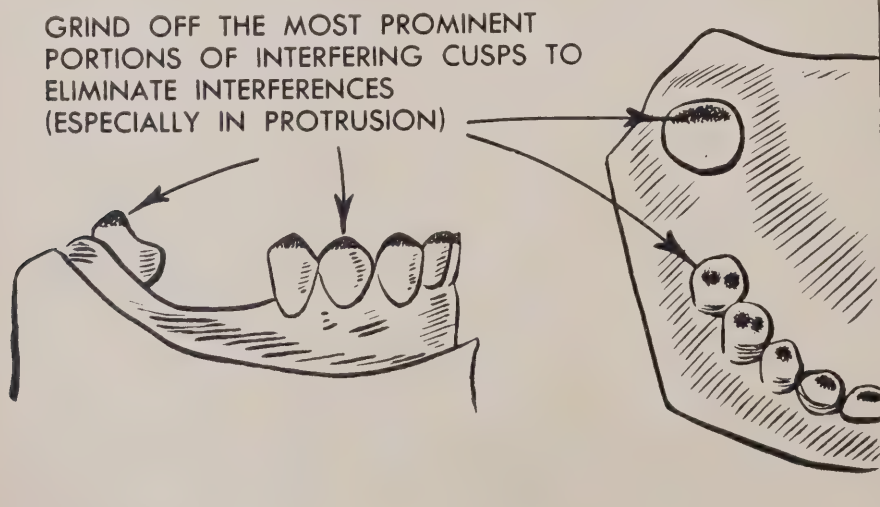
With a lead pencil, mark the cusps on the cast that will require grinding. When satisfied that levelling off the areas marked will give a more flattened occlusal plane, remove portions of the plaster cusps as marked. The cast may again be surveyed from the side and, after several attempts, it will be seen that the most prominent portions of the occlusion, i.e. the flattened cusps, now present no threat to the stability of an upper denture.

Eventually cusplless upper molars and bicuspid will be set up on the upper base so that they contact only those flattened areas on the lowers in addition to the other occlusal locations which presented no problem originally.

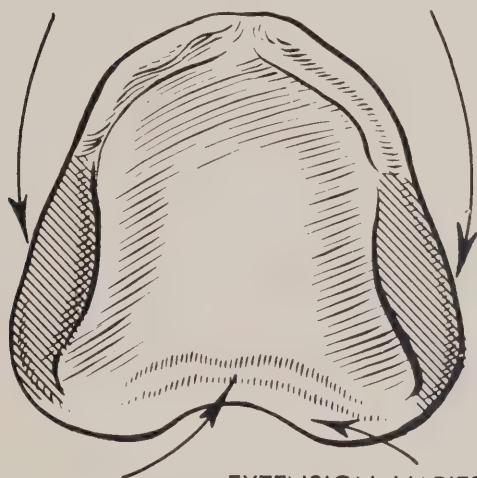
The study cast can next be examined for the position and especially the height of the lower anteriors. The cuspid may be a little too prominent or there may be one or two laterals which have elongated. As with the posteriors, these may be marked and cut down for better incisal height and better esthetics. The model now has the completely corrected occlusal pattern that will allow a comparatively flat setup of the upper teeth. (Balance will be considered later).

On the next visit, the patient's natural lower teeth are reduced to the height suggested by the corrected study model. Use a diamond wheel and keep it wet at all times. Do not overdo the grinding but keep in mind that points of interference *at the level of occlusion* must either be eliminated or left out of all occlusal contact in the setup.

An alginate impression is taken of the corrected mandibular teeth and poured in stone or Melotte's metal (to pour in Melotte's, impression must be very dry or metal will bubble out).



THICKENED MARGIN IN
VESTIBULE ADDS TO
RETENTION AND ESTHETICS



POSTDAM IN
USUAL LOCATION

EXTENSION VARIES IN
WIDTH FROM $\frac{1}{8}$ " TO $\frac{1}{4}$ "
(VARIES IN INDIVIDUALS)

MODIFICATION BY ADDITION

There is an occasional case which must be corrected by additions. In these mouths, the bicuspid and first molar are considerably *below* a flat plane of occlusion established at the height of the anteriors and second molars. It is necessary to add to the malpositioned teeth. A bar lower partial denture which carries acrylic or metal onlays is constructed. The onlays provide means of obtaining a *flat* overall occlusion at the proper height.

The case is waxed up and, after trying and approval, is finished. Insert the denture in the mouth and take an alginate impression of the natural teeth and the partial denture *as a unit*. Pour the cast.

DENTURE BASE

Denture base form is important always but especially so when lower occlusal conditions are not ideal. No attempt will be made to describe an impression tech-

nique. There are, however, three areas of the denture base which can often be improved by slightly different treatment.

First area: The Distal Margin

Many times, the distal palatal margin of the average upper denture can be made longer than is customary. The added extension can be routinely $\frac{1}{8}$ -inch to $\frac{1}{4}$ -inch in width, angling out at a point opposite the inner side of one ridge and continuing in its full width to the inner side of the other ridge except in the most central portion of the palate. Here it must be shorter in many cases. This extension is not postdammed. The postdam is placed in the usual position, that is, in a line slightly behind the foveae palatinae. The tissue under the margin of the extension will not stand a postdam. Where it is indicated, this addition will add more to retention than any other change or addition exclusive of occlusal correction.

Second area:

The buccal vestibule extends from the cuspid backwards to a point just short of the distobuccal corner of the denture. The margin of the denture should be as wide or even slightly wider than the contour of the vestibule suggests. This will vary a good deal. Any possible additional width adds to the retention of the denture at all times. Contact with the loose tissues of the cheek permits considerable displacement without breaking the seal. The wider wall means that the denture itself is wider and we gain a mechanical advantage on the balancing side during function. Of course, the added tissue contact is always of value on the working side as well.

Third area: The Labial Margins

As much as possible, the occlusion is planned to prevent any forward thrust of the denture. The labial wall can be made a trifle more retentive to help counteract forward shift. It is done by scribing a tiny ditch slightly below the line of tissue reflection in the labial area. This can be from $\frac{1}{2}$ mm. to $1\frac{1}{2}$ mm. in depth, varying with tissue differences. It should begin at the margin of the mesial slope of the buccal frenum, continue forward to the labial frenum and on to the mesial slope of the buccal frenum on the other side. It can be accented slightly around the labial frenum since this is an area where upper dentures are commonly deficient. The air-seal thus created is helpful to the patient during the learning period. It is to be considered as an emergency aid.

ACRYLIC BASE

It would seem ideal to be able to check a difficult case at various points during its construction. For this reason it is often best to make a permanent acrylic base. This is eventually the actual base of the finished denture. It can be checked for retention and over-and-under extension before teeth are set up.

Should the amount of retention be less

than adequate at this time, it is good technique to do a selfcure chairside reline to improve it. This is done before records for mounting the case are made.

DENTURE SPACE (FREEWAY SPACE)

The extent of the interocclusal dimension can be varied to advantage. Usually a greater space is of benefit esthetically. When the retention of the case is paramount, a lessening of the denture space will minimize denture shift in function. A good general rule, therefore, is to close up a difficult case a little more than ordinarily.

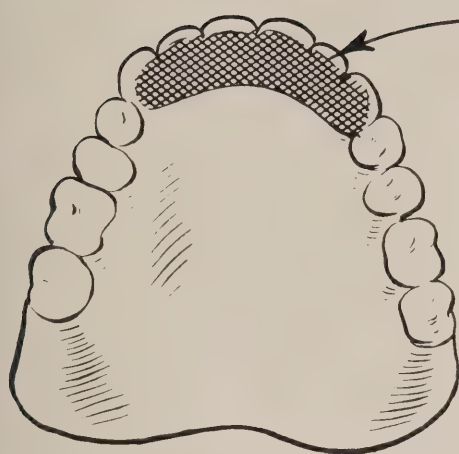
THE INCISAL STOP

It is reasonable to assume that the denture base would be more stable if simultaneous occlusal contacts were made anteriorly and posteriorly. The base would show more retention and there would be less tendency to tip anteriorly.

An almost ideal situation would be to have occlusion completely around the denture including the posterior palatal margin.

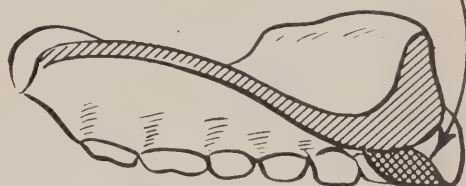
It is possible to have linguo-incisal contact, at the same time the posteriors meet, by the use of an incisal stop as suggested by Kramer of Brooklyn, N.Y. An incisal stop is a crescent-shaped rim of acrylic material built up immediately behind the upper six anteriors. Its height is almost, but not quite, that of the anteriors. It extends from cuspid to cuspid. In width, i.e. labiodistally, it is often roughly 2 to 3 mm. but occasionally thicker when the position of the lower anteriors demands it. (It cannot be used in extreme cases.)

It is so arranged that the lower anteriors contact it in centric and in most protrusive and lateral positions. Form and outline are easily determined by adding wax to the setup. Soften the occluding surface and have the patient make various eccentric excursions that will determine its functional occlusal form. (Upper anteriors may be set to satisfy esthetics. There is no need to compromise for purposes of incising).



INCISAL STOP

1. SEATS DENTURE SNUGLY IN ANTERIOR PORTION
2. ELIMINATES TRIPPING IN PROTRUSION
3. ADDS TO OCCLUSAL AREA (OF ADVANTAGE WHERE POSTERIORS ARE SCARCE)



An incisal stop should be no wider than absolutely necessary. In the finished denture, it can be contoured and polished to a high gloss to lessen tongue interference. However, it is surprising how quickly the patient accustoms himself to it and it is also surprising that speech problems are, at worst, only minor and temporary.

As the case settles, the tendency is invariably for the occlusion to become heavier anteriorly. For the health of the upper anterior ridge, the incisal stop should be checked closely on insertion of denture — again in one month. The anterior and posterior contacts must be kept simultaneous at all times.

UNILATERAL BALANCE

Unilateral balance is a state of stable equilibrium ON ONE SIDE OF A DENTURE existing independently of and receiving no aid from the other side. *It is indispensable in a single upper denture.* Each tooth must be set with unilateral balance in mind. The stability of the denture during mastication is largely determined by how well the unilateral balance has been planned on the working side.

How To Get It:

First: Place upper posteriors over or inside the ridge crest.

Second: Place the upper molars close to the ridge crest in the vertical dimension.

Third: Use cusplless posteriors that are narrow buccolingually.

Fourth: Have the denture base cover as large an area as possible.

BILATERAL BALANCE

One of the most difficult upper dentures is solved by special attention to bilateral balance. The case involves a small upper arch opposite a large mandibular arch. Since unilateral balance demands teeth set over the ridge and narrow bucco-lingually, it will often be found that the artificial upper molars lose contact on the balancing side when the patient is in his most extreme lateral position on the working side. To overcome this difficulty, tiny balancing ramps may be added to the buccal side of the distobuccal cusps of the upper first molars. These ramps can be planned in wax in the setup or may be added to the finished denture. In size they need be, roughly, no larger than a sixth of the occlusal dimension of the molar.

If the upper denture has been finished before the need for more lateral balance is discovered, the ramps are very simply added to the distobuccal corner of acry-

lic first molars. Use clear, self-curing acrylic or P.F. acrylic. The ramps should be well contoured buccally, and highly polished. The addition of these two tiny ramps, where necessary, will steady a shifting denture unbelievably.

In checking their efficiency in the finished denture, the carbon paper should contact the posterior teeth including the ramps and the incisal stop at the same time, so that one may be sure the occlusion is undisturbed and smooth-riding in all the various functional positions. When both unilateral and bilateral balance are well executed, a denture will often double its initial retention in a week or ten days.

THE SET-UP

In setting up teeth, the chief considerations are avoidance of interference from the lowers and planning for unilateral and bilateral balance.

The anteriors are set to satisfy esthetics almost entirely. Much of the anterior function will be handled by the incisal stop in the average mouth.

Upper cusplless posteriors are set to meet only the previously flattened cusps of the lowers; no other part of a lower posterior tooth is occluded.

The upper second molar is left off especially when the opposite lower molar is tilted. Sometimes the prominent distal cusps of the lower molar can be ground fairly flat and an upper molar set to the prepared area only. As a general rule, it is safer to omit the upper second molar.

Occasionally two molars remain on one side on the lower and both are tilted. The more anterior tooth of the pair may be tilted so far forward as to be well below a flat plane of occlusion. This tooth should be ignored in the setup. An artificial tooth in contact with a natural tooth in this position would merely deliver a forward thrust to the upper denture.

If a partial lower denture is being made, an acrylic or gold onlay can be built as part of the denture. It will fit

the occlusal surface of a tilted molar and be shaped to conform to the planned occlusion. A partial lower can be set up, completed without a try-in and adjusted in the mouth before registrations are taken. For accurate mouth records, this is a safer procedure than depending on the average unstable baseplate of a lower partial.

Keep in mind that the anteriors must meet the incisal stop at the same time the posteriors are in contact. Thus the whole denture base is thrust upward. This is the only direction in which force may be exerted that will tend to strengthen the retention rather than to disturb it.

THE FINISHED DENTURE

First, check the margins for overextension. Use Indicator Gel. Denture should be warm and wet before applying Gel.

Second, remount the case to a new centric registration.

Third, check occlusion with carbon paper. Use blue articulator paper for spot-grinding centric. Use red for grinding in laterals and protrusive. Spot-grind in centric with blue paper until marks on both sides are of similar intensity. Spot-grind in laterals and protrusive with the red carbon paper until the red spots are even in intensity. Do not touch the purplish spots as these indicate some contact both in centric and lateral and/or protrusive.

Fourth, grind slightly out of occlusal contact any part of an artificial bicuspid or molar which lies buccal to the ridge crest (but leave the tiny balancers at the distobuccal of the upper first molars).

Fifth, the patient may now return for a final check up before insertion. Warm the denture in hot water. Put Indicator Gel in the ridge area anteriorly from first bicuspid to first bicuspid. Have the patient occlude in all positions again. Chill the denture in the mouth and relieve any area which seems to be receiving too much pressure. This will add to the health and maintenance of form of the anterior ridge.

Sixth, rebase. It is often wise to consider the advisability of rebasing the denture before its final insertion and subsequently. Chair side rebasing with self-curing acrylics is much the best. Do not cover the whole palatal surface of the denture. Apply a layer of the material $\frac{1}{4}$ -inch wide and 1 mm. thick around the inner margin of the whole denture including the posterior palatal border. During the setting of the material, have the patient occlude as if in function and do not remove the denture until the material is completely set. (The patient is given hot wash with which to rinse his mouth to help with the setting of the rebase material). Occasionally this may have to be repeated in six weeks.

Seventh, instructions: Advise the patient to do the "breaking-in" very cautiously and not to subject the ridges to anything more than light pressure in the beginning. He should be advised against too vigorous chewing at any time. He can also be warned not to use the two central incisors for incising! In the poorer types of mouth, this creates too great a mechanical disadvantage. If food is carried around to the cuspid area, less tilting results.

The patient is requested not to remove

the denture and to return for inspection the following day. On this visit the denture is checked for areas to be relieved (Indicator Gel) and the occlusion examined critically. Because dentures settle, there is almost always some adjustment necessary. Minor corrections can be made in the mouth but anything more should be done on an articulator. Another articulator check at the end of 10 days is often most revealing.

After the first week, the denture should be removed at night. While some patients object to it, most will agree if it is explained that the denture will remain fitted longer, the health and colour of the ridge will be improved and, normally, there will be less bone loss for life because of the physiological rest afforded the tissues.

Finally, assure the patient of your continued interest in his denture. Help him to feel that there are remedies for his difficulties and that you are most anxious to supply them.

The confidence thus generated will help to steady any uncertain feelings he may have and bolster his determination to do his part in solving the problem.

296 Ottawa St. N.,
Hamilton, Ontario.

"The dentist should objectively examine his own vocabulary and strive to use only those words and terms which not only adequately describe the idea or concept for which they were intended, but also which help eliminate some of the adverse impressions and connotations associated with dental treatment."

A Report to the Minister of Health, Province of Ontario, on

The Brantford fluoridation experiment

Prepared upon his request by The Division of Medical Statistics,
Ontario Department of Health, August 1955

INTRODUCTION

The Brantford Fluoridation Experiment was the outcome of a special meeting of the Board of Health of the City of Brantford, convened August the 19th, 1942, to discuss steps which might be taken to improve the condition of the children's teeth in that city. It is unlikely that the Brantford children's teeth were worse than any of those of the children in the rest of the Province but the authorities in that city were conscious of the facts, that nearly every child in the city suffered from tooth decay, and that not a few of the children were so badly affected that they could not masticate their food.

Dr. W. L. Hutton, Director of the Brant County Health Unit, drew the attention of the meeting to the epidemiological studies of American scientists, (McKay, 1925, and Dean, Jay Arnold, McClure and Elvove, 1939) which had been recently consolidated in a publication of the American Association for the Advancement of Science (Moulton, 1942). These studies had established that the teeth of children of continuous residence in a municipality where the water supply contained a certain amount of fluoride salts were considerably less susceptible to decay.

Chemical analysis of the fluoride content of the Brantford water, which is drawn from the Grand River, was undertaken by the Division of Sanitary Engineering of the Ontario Department of Health and it was discovered that the water contained only the merest trace of fluorides.

Speculation immediately arose as to whether the mechanical introduction of additional fluorides to a level of 1.2 p.p.m., which in naturally fluoridated re-

gions seemed to give maximum caries reduction without noticeable mottling, would result in a lowering of the susceptibility of the children's teeth in Brantford.

THE SETTING UP OF THE EXPERIMENT

With the approval of the local dental and medical societies, the Boards of Education, the Board of Trade, the Rotary, Kiwanis and other service clubs, the labour unions, and the City Council, the Medical Officer of Health of the City of Brantford, Dr. W. L. Hutton, sought the financial and scientific support of the Ontario Department of Health in an investigation of the influence of fluoridation of the domestic water supply on the dental caries attack rate. This approval was obtained, and in 1944 Dr. A. E. Berry, Director of the Division of Sanitary Engineering undertook to assist Mr. D. B. Williams, Chemist of the Brantford Water Works with installation of suitable equipment for the addition of appropriate amounts of sodium fluoride to the water supply.

At that time, no specially designed equipment for adding fluorides to a water supply was available and a volumetric dry feeder manufactured to feed Vitamin B for mixing with flour, was adapted for this purpose. A special gravimetric type of feeder is now available and has been used in many of the later installations in other areas.

The annual cost of fluoridation in Brantford using sodium fluoride has been from 13 to 17 cents per capita including the initial cost of the equipment. It has since been demonstrated by an installation in Oshawa, Ontario, that the use of sodium silico-fluoride, a cheaper chemical with a higher percentage of available

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fluoride, can reduce the per capita cost to around 6 cents per year. With the closing of the ten-year experimental period in Brantford it is planned to change over to the use of sodium silico-fluoride. Although the cost of fluoridation in a community is related to the volume of water used for industrial compared with human consumption (in Brantford with a population of 50,000 people, 1,250,000,000 gallons of water were used in 1955 for all purposes) this "theoretical waste" may be disregarded when the cost per individual is less than 1 cent per month.

Chemical analysis of the fluoride content of the water has been routinely performed using standard methods set down by the Division of Sanitary Engineering of the Ontario Department of Health. A conclusive check is available in terms of the amount of chemical actually added per million gallons of water. Up until February 1949, 23.3 pounds of 95% pure sodium fluoride were added to each million Imperial gallons of water to provide 1 p.p.m. available fluoride ion: after this date the amount was raised to 28 pounds which yields a slightly higher concentration of 1.2 p.p.m.

The cost of the fluoridation which began June 20th, 1945, was initially borne by the Public Utilities Commission of the City of Brantford and amounted to \$5,899.00 in the year 1949. In 1949 and yearly until 1955 the Provincial Health Department granted the city \$3,000.00 to aid in the cost of this experiment which was designed to benefit all communities in the Province.

Evaluation of the Brantford fluoridation project was made possible by data which have come from two independent sources. The first set of figures have come from the annual examination of all the Brantford school children, by Dr. B. W. Linscott, the school dentist, for each year since 1944 (Hutton, Linscott and Williams 1951, and 1954). The second and complementary set of figures were gathered by Dr. H. K. Brown, Dental Consultant to the Department of National

Health and Welfare, which undertook in 1948 to establish experimental controls for the City of Brantford; this was effected through the periodic examination of samples of children in Sarnia where no fluoride is present in the water, in Stratford which has a natural water supply containing 1.2 p.p.m. of fluorides, and as well as Brantford (Brown, 1952, and Brown, Josie, and Stewart, 1953).

FINDINGS

The independent surveys by the Brantford City Health Department, and by the Department of National Health and Welfare are in agreement that there has been a significant reduction in the dental caries attack rate in Brantford since the introduction of the fluoride in 1945 (Tables I and II). In the same period the dental caries attack rates in the City of Stratford which has natural fluorides in its domestic water supply, and in the City of Sarnia which has essentially no fluorides in its water, have, if anything, slightly increased.

The reduction in dental caries susceptibility has been evident in both the permanent and deciduous dentitions. In terms of the average numbers of decayed, missing or filled teeth per child, this reduction has been in the order of 60 per cent for children of continual residence. For older children or non-continuous residence, that is those migrating into the region in the later years of the experiment, some caries reduction has also been observed.

DISCUSSION

The above findings have been completely corroborated by similar studies conducted concurrently in the United States. From the Kingston-Newburgh study in New York State, which has recently completed its tenth year (Ast, Bushel, Wach and Chase, 1955), it has been reported that for 6 and 7 year old Newburgh children who have consumed fluoridated water all their lives, the average number of decayed, missing and

TABLE I
Mean number of decayed, missing, or filled permanent teeth per child of continual residence
in Brantford, Sarnia and Stratford—1944 to 1955 by ages

Survey	City	Age	1944	1945	Fluoridation June 1946 in Brantford	1946	1947	1948	1949	1950	1951	1952	1953	1954	% Reduction Since 1944-45
City Health Department	BRANTFORD	6	0.33	0.47		0.50	0.26	0.25	0.14	0.06	0.11	0.16	0.15	0.14	65
		7	1.87	1.45		1.83	1.00	0.74	0.75	0.51	0.57	0.51	0.48	0.56	51
		8	2.40	2.48		2.76	2.32	1.67	1.37	1.31	1.07	1.18	1.16	1.18	52
		9	3.87	3.17		3.47	2.80	2.70	2.18	1.82	1.79	1.71	1.90	1.68	52
		10	3.71	3.89		4.24	3.73	3.24	3.16	2.62	2.57	2.37	2.06	2.18	49
		11	4.60	4.78		4.92	4.71	4.13	3.74	3.51	3.22	3.03	2.88	2.62	44
		12	6.41	6.19		6.32	5.85	5.59	5.00	4.29	4.31	3.94	3.77	3.66	42
		13	7.61	7.94		7.94	7.02	6.50	6.46	5.57	5.29	5.22	4.89	4.37	44
		14	8.75	8.45		9.47	8.48	6.66	7.00	7.50	6.41	5.74	5.91	5.78	32
National		6-8						1.41			0.93		0.63	0.44	Since 1948 69
		9-11						4.07			2.85		2.47	2.27	44
		12-14						7.68			6.10		5.51	4.89	36
Health and Welfare	Stratford	6-8						0.41			0.75		—	0.47	—
		9-11						1.13			1.76		—	1.46	—
		12-14						2.55			3.12		—	3.02	—
Welfare	Sarnia	6-8						1.60			1.99		2.05	1.69	—
		9-11						4.21			4.48		4.67	4.44	—
		12-14						7.94			8.55		9.54	8.84	—

Note: The independent surveys by the Brantford City Health Department and N.H. & W. are in agreement that there has been a reduction in the number of decayed, missing and filled teeth in Brantford since June 1946 when fluoride was introduced. This reduction for ages where full benefit has been achieved is between 50 and 60%. In the same period the rates in Stratford which has natural water fluoridation and in Sarnia which has no fluoride in the water, have, if anything, slightly increased.

TABLE II
Mean number of decayed, missing or filled deciduous teeth per child of continual residence
in Brantford, Sarnia and Stratford from 1944 to 1955 by ages

Survey	Region	Age	1944	1945	Fluoridation June 1946 in Brantford	1946	1947	1948	1949	1950	1951	1952	1953	1954	% Reduction Since 1944
City Health Dept.	BRANTFORD	5	5.82	5.45		4.116	4.11	2.98	3.11	2.61	2.59	2.74	2.31	2.20	61
		6	6.77	6.51		5.73	4.90	4.72	3.57	3.90	3.45	3.16	3.33	2.89	56
		7	6.90	6.66		6.43	6.14	5.16	5.08	4.08	4.39	3.79	3.67	3.50	48
		8	6.31	6.49		6.52	6.40	5.94	5.27	5.29	4.24	4.59	3.79	4.04	37
		9	6.59	5.73		5.66	5.45	5.14	5.10	4.73	4.87	3.86	4.22	3.35	46
		10	3.51	3.97		4.10	3.77	3.61	3.88	3.52	3.17	3.41	2.85	2.89	61
National Health and Welfare (missing teeth omitted)	BRANTFORD	11	1.74	1.75		2.29	1.96	1.94	1.90	2.18	1.83	1.62	1.90	1.57	10
		6-8						4.95			3.58		3.22	2.76	Since 1948 44
		9-11						2.37			2.25		1.94	1.93	18
		6-8						2.20			2.62		—	2.63	—
		9-11						1.66			1.76		—	1.58	—
(missing teeth omitted)	Sarnia	6-8						4.89			4.89		5.17	5.21	—
		9-11						2.50			2.41		2.26	2.11	—

Note: The protection of deciduous teeth by fluoridation is apparent from both sets of data above. These data are somewhat less reliable in ages above 9 years since it is not always possible to distinguish between a tooth missing by extraction and one that is normally shed. While the caries attack rates in Brantford have decreased since the beginning of water fluoridation, the rates for Stratford which has had natural fluoridation for 30 years, and Sarnia which has no fluoride in its water have remained about the same.

filled permanent teeth was 75 and 68 per cent lower than for comparable Kingston children. At present 1,043 cities in the United States are fluoridating the water supplies for 20,250,000 people, and the practice of water fluoridation has received the approval of almost every official health agency in the United States, Canada and Great Britain.

An investigation into the stage of tooth development during which fluorides must be consumed if the caries resistance is to be achieved was undertaken by the Dental Section of the Division of Medical Statistics in co-operation with the Dental Section of Elgin County Health Unit (Grainger and Coburn 1955). This latter study indicates that a child's tooth receives protection if it has undergone at least the last few months of pre-eruptive development in the mouth when the child is using fluoridated water. Since the development and eruption of the deciduous and permanent teeth is more or less continuous over the first 20 years of life, water fluoridation can be said to be of some benefit to all individuals of these age groups who are consuming fluoridated water.

An excellent study by the United States Public Health Service (Russell and Elvove, 1951) has established that the caries resistance persists at least to the age of 44 years. Since the protection is believed to be due to the chemical bonding of the fluoride with the calcium phosphate of the tooth to produce more resistant enamel, there is little reason to suppose that this protection against caries would be other than lifelong.

The report of the United Kingdom Mission on the subject of fluoridation of domestic water supplies as a means of controlling dental caries (1953), notes that the controlled studies in America were sufficiently encouraging for the United Kingdom Government to send a Mission to study the results. The Mission found that fluoridation was a useful means of reducing the incidence of dental caries in North America and deduced that it would be useful in the United Kingdom.

The Mission further noted that no evidence has been forthcoming that the continued consumption of fluorides at a level of about 1 p.p.m. is in any way harmful to health and that no risk at present is known to exist. If a risk does exist at all, it is so inconspicuous that it has not been revealed by many years of investigation.

ECONOMIC ASPECTS

The economic soundness of water fluoridation was discussed as below in the report "The Importance of Water Fluoridation to Dental Public Health", as submitted in February 1955.

"Without water fluoridation the average fourteen year old child in an Ontario community will have experienced about 10 carious surfaces in the deciduous dentition and will have about 13 surfaces of his permanent teeth affected by caries. The cost of restoring these 23 surfaces (if it were possible in the face of the dental manpower shortage) would have been at least \$50.00. With water fluoridation this need would be reduced by around two-thirds and the cost presumably to about \$20.00. Thus the public expenditure of about \$1.40 for water fluoridation, (10 cents per capita for 14 years) eliminates the need for the individual to spend almost twenty times that amount for restorative dentistry. Beyond these considerations is the fact that a perfect tooth is more desirable for many reasons than the most expertly filled tooth."

SAFETY OF FLUORIDATION

The safety of ingesting water fluorides at the recommended dosage has been studied and has been attested to by all of the leading agencies and organizations concerned with the health of the public.

Hagan, Pasternack and Scholz (1954) in analysis of mortality from all causes and from five selected causes — heart disease, cancer, intracranial lesions, arthritis and cirrhosis of the liver — in 64 cities and 16 states, compared the rates of these cities in which water analysis showed fluoride content to be 0.25 p.p.m. or less with those cities with a fluoride content of 0.7 p.p.m. or more. These data showed no statistically significant differ-

TABLE III
Crude and Standardized Death rates—Selected causes
Certain cities—1950-1953

CITY	Cardiovascular-renal Disease		Cancer	
	Crude	Standardized*	Crude	Standardized*
Brantford.....	638	558	145	130
Stratford.....	655	503	172	139
Sarnia.....	437	541	125	148
Hamilton.....	502	514	162	162
Toronto.....	649	546	196	166
Sudbury.....	256	551	82	143

*Derived by the indirect method using the population at ages for 1951 for each municipality and the mean annual death rates at ages for the Province for 1950-53.

Note No. 1: Due to an apparent discrepancy in the count of deaths for Sarnia the rates for this municipality are based on the average number of deaths for the years 1949, 1950, 1952, 1953.

Note No. 2: When the rates have been adjusted as if the number of people, in the various age groups were the same in all communities, the death rates for Brantford and Stratford do not differ significantly from the others.

ences between the age-adjusted mortality rates of fluoride and non-fluoride cities from all causes or from heart disease, cancer, intracranial lesions, arthritis or cirrhosis of the liver.

The Division of Medical Statistics of the Ontario Department of Health has examined the crude and the age-adjusted death rates for cardiovascular, renal diseases, and cancer for the cities of Brantford, Sarnia, Stratford, Hamilton, Toronto, and Sudbury, (Table III). When differences in age distribution of the populations are eliminated, the rates for the two cities having adequate fluoride in the domestic water (Brantford and Stratford) are similar to the rates for the non-fluoride municipalities. Failure to adjust rates for age differences would result in the false conclusion that the death rates were much lower in Sudbury a fact due solely to lower proportion of older persons in the population.

The Commission on Chronic Diseases under the auspices of the United States Public Health Services has recently reported (1954) that "there was no evidence that the continued consumption of drinking water containing approximately 1 p.p.m. fluoride is in any way harmful to the health of adults or those suffering from chronic illness of any kind." The report concludes "the Commission therefore urges American communities to adopt this public health measure as a

positive step in the prevention of the chronic disease, dental caries."

SCIENTIFIC OPINION RE FLUORIDATION

The following summary statements regarding water fluoridation in Brantford have been released by the local medical, dental, and health authorities in Brantford, the Department of National Health and Welfare, and the Council of Research of the American Dental Association.

(a) Medical Staff of Brantford General Hospital, June 24, 1954.

"At a recent meeting of the medical staff of the Brantford General Hospital, the members were asked if they had seen any untoward effects from the use of fluoridated water in this vicinity, with the result that no such observations have been made by any practitioner to the best of our knowledge."

(b) Brant County Dental Society, June 8, 1954.

"The Brant County Dental Society endorses without reservation the fluoridation of the city water supply as an effective means of reducing the incidence of dental caries. In the continual observation of the mouths of the residents of the City of Brantford, the practising dentists have become aware of no untoward effects on the teeth, gums, or supporting tissues."

(c) Dr. W. L. Hutton, Medical Officer of Health for City of Brantford, June 8, 1955.

"Brantford's ten year study of water fluoridation has demonstrated that fluori-

dation is simple, cheap, effective, and completely safe."

(d) Dr. H. K. Brown, Dental Consultant to Department of National Health and Welfare, July 15, 1955.

"There has been a steady and substantial decrease in the incidence of tooth decay in Brantford children during the period of our study of the effects of water fluoridation in that city. No ill effects of either a dental or a medical nature have come to our attention."

(e) Dr. H. Trendley Dean, Secretary of the Council on Dental Research of the American Dental Association, and the most important single research worker in the development of water fluoridation, June 1, 1954.

"I have always looked upon Grand Rapids, Newburgh, and Brantford as the keystones in the fluoridation tests. They are the oldest and the only ones begun in 1945. Each is entirely independent of the other. When we see the results after 8 years coming out almost identical, the complete independence lends much additional scientific support to the theory of fluoridation."

With reference to fluoridation and periodontal diseases two very careful studies have been conducted in the United States. These are commented on below in a letter written by Dean R. G. Ellis in consultation with Dr. Charles Williams of the Periodontic Department of the Faculty of Dentistry, University of Toronto, to Dr. H. K. Brown, Department of National Health and Welfare, July 18th, 1955.

"At the last meeting of the staff of the Department of Periodontics of this Faculty, there was discussion of the possibility of clinical studies being conducted in Canada concerning the relation of fluorides in a water supply to periodontal disease.

"It was noted that the excellent and intensive study of Russell and Elvove of the U.S. Public Health Service revealed less periodontal disease among adults 20-44 years of age who had consumed water containing 2.5 parts per million of fluorides since birth than was found among a similar group of adults where the water supply had contained no fluoride. The report of Zimmerman, Leone, and Arnold concerning a ten-year study indicated no

significant difference in the prevalence of disease between an adult group which had consumed 8 parts per million of fluoride for thirty-seven years or more, and a similar group who had used water with 0.4 parts per million of fluoride was discussed. This evidence is highly reassuring, as it relates to apprehensions that have arisen on the theoretical possibilities of an unfavourable effect of fluoridation on periodontal tissue . . ." and it is stated that if in the light of the above the Department of National Health and Welfare feels there is need to conduct a long term study . . ." the Members of the Department of Periodontics are willing to co-operate at least in a consultative capacity."

In reply, August 3, 1955, Dr. H. K. Brown of the Department of National Health and Welfare who has been engaged for that Department in the fluoridation studies in Brantford, strongly disclaimed the need for such work.

"It has been suggested in certain quarters that a study of periodontal disease in relation to the presence of fluorides in the water supply be undertaken by us. It would be an interesting thing to do, but to date evidence is lacking, other than some of a highly speculative nature, that such a study should be undertaken. Some good studies have already been done on pure speculation—one during a ten year period—and the findings have revealed no more periodontal disease associated with fluoridated water than with fluoride-free water."

An open letter from Dr. D. Ast, Director of the Bureau of Dental Health of the New York State Health Department to the Editor of the Archives of Pediatrics, June 16, 1954 is appended to this report because of its excellent treatment of the fallacious arguments which have been put forward in opposition to fluoridation. (Appendix A).

SUMMARY

1. A ten-year experiment in water fluoridation initiated in 1945 by the City Health Department of Brantford, and aided since 1949 by the Ontario Department of Health ended in June 1955.

2. The purpose of this study was to determine whether the mechanical adjust-

ment of the fluoride content of the municipal water supply to 1.2 p.p.m. fluoride ion would reduce the rate of tooth decay to the lower level found in regions where the drinking water contains fluoride naturally.

3. The evidence produced by the investigators of the Brantford City Health Department and of the Department of National Health and Welfare, independently show that since the introduction of the fluorine in the water there has been a significant decrease, amounting to approximately 60 per cent in the number of decayed, missing and filled teeth suffered by Brantford school children.

4. At the same time, it has been established that there has been no change in the already low dental caries attack rates in Stratford which has 1.2 p.p.m. of natural fluoride in its domestic water, or in the relatively high rates for Sarnia which has had virtually no fluoride in its water.

5. During the ten-year period since fluoride was added to the Brantford water supply the caries attack rates in that City have decreased to become comparable to those in the natural fluoride region of Stratford. Previously the Brantford City dental caries rates were as high as in Sarnia where there is no fluoride in the water.

6. The tooth decay rate is lowered for both the deciduous and permanent teeth provided the child consumed fluoridated water for about a year previous to the eruption of the particular teeth.

7. These findings have been corroborated by similar studies in Grand Rapids, and Newburgh in the United States.

8. The protection has been demonstrated by workers in the United States Public Health Service to last into adult life.

9. Careful scientific investigations have revealed no untoward effects of fluoridation of domestic water supplies. This absence of any clinically observable ill effects has also been attested to by the

practising physicians and dentists in the City of Brantford.

10. The cost of water fluoridation in Brantford has ranged between 12 cents and 17 cents per capita per year using the chemical sodium fluoride but the use of sodium-silico fluoride in the future is expected to reduce this cost to about 6 cents per capita. This small expenditure results in an average reduction in decayed teeth, the treatment of which would cost between 10 and 20 times as much.

11. In the United States, 1,043 cities with a total population of 20,250,000 people now use fluoridated water as a means of reducing the susceptibility of teeth to decay. (August, 1955)

12. The practice of water fluoridation has received the official approval of official health agencies throughout the United States, Canada, and Great Britain.

13. Dr. W. L. Hutton, Medical Officer of Health for the City of Brantford, deserves much credit for initiating the practice of water fluoridation in Canada. Dr. Hutton's own words may be used to summarize the conclusions of the study.

"Brantford's ten-year study of water fluoridation has demonstrated that fluoridation is simple, cheap, effective, and completely safe."

August 23/55.

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Appendix A

Dr. John F. Landon, Editor,
Archives of Pediatrics,
45 East 17 Street,
New York 3, New York.

Dear Doctor Landon:

The dental benefits which accrue from ingested water fluorides at a concentration of approximately 1 p.p.m. F have been well documented. (1-3) This documentation is based on studies from areas where fluorides occur at the optimal concentration naturally and from studies where the fluoride ion concentration has been supplemented to bring it up to desired concentration. These studies indicate that if 1 p.p.m. fluoride ion is present in the domestic water supply and is ingested from early infancy on, the dental caries experience will be about $\frac{2}{3}$ less than if the water were fluoride deficient. It has also been established that this protection persists through adult life to at least age 44. (4)

Likewise, the safety of ingesting water fluorides at the recommended dosage has been studied and has been attested to by all of the leading agencies and organizations concerned with the health of the public. (5-11)

In a paper appearing in the Archives of Pediatrics, April 1953, Dr. W. J. McCormick has chosen to ignore all of this positive information concerning the efficiency and safety of water fluoridation as a public health procedure to control dental caries. Instead, he has presented some material, much of it out of context, that appears to favor his preconceived ideas. As I shall demonstrate below,

many of Dr. McCormick's references are incorrectly quoted, and others have no bearing on the question of domestic water fluoridation. The abstracting of his paper in the Journal of the American Medical Association ⁽¹²⁾, and in the Journal of School Health, ⁽¹³⁾ has given his ideas wide circulation, and consequently I feel that an answer pointing out these errors is warranted.

McCormick starts his presentation with the premise that dental caries is an index of nutritional status and then goes on to elaborate on the dangers of trying to control this disease with ingested water fluorides. In his initial premise he ignores all of the work which has been done during the past fifty years and which has led to the overwhelming acceptance of the fact that the relationship of dental caries to Nutrition is not one of a nutritional deficiency. Rather it is initiated by the end product of fermentable carbohydrate in the mouth. No evidence has been reported that clearly shows that deficiencies of vitamin C or members of the B complex lead to increased susceptibility to tooth decay ⁽¹⁴⁾, or that additions of these nutrients to diets would decrease the caries susceptibility. Indeed, surveys indicate that lowered susceptibility to dental caries occurs in the presence of single or multiple deficiencies of the B complex and vitamins A and C ⁽¹⁵⁾. The validity of the study by Hanke et al ⁽¹⁶⁾ cited by McCormick to show the value of vitamin C, is solely dependent on the ability of the examiners to evaluate the progress of decay and the current activity

of the carious lesion at each examination and for which no criteria exist.

The work of Nizel and Harris ⁽¹⁷⁾ on the relative cariogenicity of New England and Texas foods fed to hamsters is offered to provide an alternative nutritive explanation to the protective effect of fluoride on caries in Texas. The results of this study were preliminary and inconclusive. However, contrary to McCormick, riboflavin was not effective in preventing caries in this work, because it was the New England diet that had the higher riboflavin content. It might be noted with interest that Dr. Harris recently endorsed fluoridation of water supplies as the most effective way to reduce dental decay on a large scale ⁽¹⁸⁾.

With regard to the potential toxic effects of ingested fluorides, the paper cites the deleterious effect on cattle grazing in the vicinity of aluminum plants and on humans who work in cryolite mines. It does not indicate the high concentration of fluorides ingested in these cases and leads the unsuspecting to believe these results will occur from drinking water at 1 p.p.m. F. According to Roholm, ⁽¹⁹⁾ whose monograph on fluorine intoxication is a classic, the threshold dose of fluorine for cattle is 2-3 mg per kg of body weight. Therefore, a 1,000 pound cow could safely ingest 910-1,365 mgs F daily.

In the cryolite mines Roholm indicated that the miners evidencing spontaneous osteosclerosis caused by ingestion of cryolite dust were getting 0.2-1.0 mg F./kg body weight daily. Therefore a man weighing approximately 75 kg (165 lbs.) ingested from 15-75 mgs F. daily. In water fluoridation we are talking about a child ingesting approximately 1 mg daily. A child weighing 15 kg (32 lbs.) drinking a quart of water with 1 p.p.m. F. would therefore be getting about 0.07 mg/kg of body weight daily.

The "very small amounts" of sodium fluoride that Brandl and Tappenier ⁽²⁰⁾ fed to dogs for 21 months amounted to 402.9 grams or 230 grams in 12 months.

This is equivalent to the amount of fluoride that would be ingested by a person drinking 600 quarts of water containing 1 part per million fluoride daily for one year.

Dr. McCormick cites the work of Loevenhart and Pierce ⁽²¹⁾ (without giving the reference) to show the effect of fluoride on body enzymes. This work, published in 1906, indicated that sodium fluoride as 1 part in 5 million (not in 15 million as stated by McCormick) would inhibit liver lipase activity. However, pancreatic lipase activity was actually accelerated by the same concentration of fluoride. These erratic results, coupled with the fact that these results have not been verified in all these years, would therefore appear to be without meaning.

The theory of Stuber and Lang ⁽²²⁾ that there is a direct correlation between blood fluoride and prolongation of blood coagulation time was discarded many years ago, ⁽²³⁾ particularly since their overall theory of blood coagulation denied the role of thrombin in the process, an untenable positive today.

McCormick in his paper states that Dr. H. K. Box, a periodontist of international repute of Toronto, informed him that he had checked the dental status of a number of subjects who had been using naturally fluoridated water for several decades and found "appalling periodontal disease, with marked morphological changes, such as enlargement of the roots and narrowing or closure of root canals and pulp chambers, indicating premature aging of the tooth structure making extraction very difficult and prone to root fracture. Many of these cases had severe gingivitis and pyorrhea and premature need for dentures."

I wrote to Dr. Box to confirm this statement and on April 8, 1954, Dr. Box ⁽²⁴⁾ advised me that McCormick must have misunderstood him because he had never made a survey of periodontal or pulp conditions in any area of naturally fluoridated water. He had discussed with McCormick the work of Roholm who had reported on cryolite intoxication.

I checked further into this question of periodontal disease and morphological changes in teeth resulting from ingested water fluorides with Dr. F. S. McKay in Colorado Springs (2.6 ppm F in domestic water for 75 years). Dr. McKay is a periodontist of note and a pioneer in fluoride investigations. His reply dated February 7, 1954 ⁽²⁵⁾ states in part. "I cannot characterize his (McCormick's) assertions as to conditions he ascribes to the use of fluorized water in any way other than as utterly and completely unsupported in my own experience and observation. No such relation between the use of our domestic water (2.6-2.8 pp. fluoride) exists in the tissues as set forth in his article among the inhabitants of this city. But not contented with my own observations I have delayed my reply to you until I could submit McCormick's statement to Dr. Wilton W. Cogswell Sr. of this city. He is a practicing exodontist and oral surgeon here for the past 34 years, an excellent pathologist and author of a textbook on Exodontia. He dismisses McCormick's statements as entirely unfounded and that in his own library of 35,000 cases of dental radiographs he has found nothing resembling what McCormick describes. His opinion is even more emphatic than I have indicated. I know of no one here more capable of passing judgment in this matter than Cogswell. He states further that the morphology of tooth roots is in no wise different than that among non-fluoride individuals contrary to McCormick's statement."

In a study of gingivitis among school age children of three communities in Canada recently published ⁽²⁶⁾, it was concluded that there was no significant relationship between the presence of fluoride in the water supply and the occurrence of gingivitis.

The work of the Smiths ⁽²⁷⁾ is cited to show that the protection against dental caries provided by water fluoridation is largely lost after 21 years of age. Here again, both McCormick and Smith neglect to consider the quantitative aspects of water fluoridation. The data here refer to a

small community in Arizona with artesian well supplies providing water with high fluoride concentrations. In the paper cited by the authors ⁽²⁸⁾ the values are 3.8 to 7.1, a disturbing inconsistency. All residents of this community had severely mottled teeth. The problems associated with the fragility, esthetics and restoration of such teeth are well known, but are completely irrelevant to the consideration that water containing one part per million fluoride provides caries protection without any disfiguring of teeth.

The study by Russell and Elvove of the prophylactic effects of ingested water fluorides on adults was cited earlier. ⁽⁴⁾ This controlled study shows conclusively that the dental benefits last at least through age 44. The DMF rates were 60 per cent lower in Colorado Springs compared with Boulder City (fluoride free). The Boulder City adult residents lost three times as many teeth as did those in Colorado Springs.

The latest reports on the safety of water fluoridation was made by the Commission on Chronic Illness at its meeting in Chicago, March 18, 1954. ⁽²⁹⁾ The report was based on a study by a special committee consisting of Dr. Kenneth F. Maxcy, Professor of Epidemiology, John Hopkins University School of Hygiene and Public Health, Baltimore; Dr. Edward J. Stieglitz, outstanding geriatrician of Washington, D.C., and Dr. Nathan Shock, Chief of the Section of Gerontology, National Institutes of Health, Public Health Service. The Commission reported that there was no evidence that the continued consumption of drinking water containing approximately 1 ppm F is in any way harmful to the health of adults or those suffering from chronic illness of any kind. The report concludes, "The Commission therefore, urges American communities to adopt this public health measure as a positive step in the prevention of the chronic disease, dental caries."

Very truly yours,
David B. Ast, D.D.S.,
Director,
Bureau of Dental Health.

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Dental manifestations of systemic disease

1. Paget's Disease

by GEORGE A. MORGAN, D.D.S.; JOSEPH KULYK, D.D.S.; COLIN I. TREADWELL, D.D.S. and J. GORDON BOOTH, D.D.S.

Paget's Disease (Osteitis Deformans) is a skeletal condition of unknown etiology affecting most commonly the long bones, pelvis, calvarium of skull, frequently observed in the maxilla, rarely in the mandible.

Paget's Disease is unlike Von Recklinghausen's Disease (Osteitis Fibrosa Cystica) in that it rarely occurs before the age of thirty.

Paget's Disease takes its name from Paget who was the first to accurately describe it. Its incidence of occurrence is about equal for sex and there doesn't seem to be any familial tendency.

Stafne¹ believes that since Paget's Disease is a condition observed generally in middle life that it is not associated with metabolic or endocrine disturbances.

Stafne and Austen² in a series of cases

have described the Roentgenological picture of Paget's in the maxilla and the mandible in the early stages as one of resorption. The normal trabecule pattern is converted to a fine lace-like pattern, the lamina dura around the teeth in the involved regions may disappear and in many cases marked areas of resorption may be noted around the apical ends of the roots. In some cases the apical end of the roots may be resorbed to a varying degree.

Paget's disease in the late stage takes on the appearance of dense sclerotic bone frequently surrounded by areas of osteoporosis. There may be considerable enlargement and deformity of the jaws. There is generally a deposition of hyperplastic cementum in which the cementum is inclined to be laid down in a series

of irregular deposits, not as a smooth layer as is ordinarily seen in the deposition of cementum in hypercementosis. This characteristic of Paget's Disease when observed is said to be diagnostic and differentiates it from fibrous dysplasias and other bone lesions.

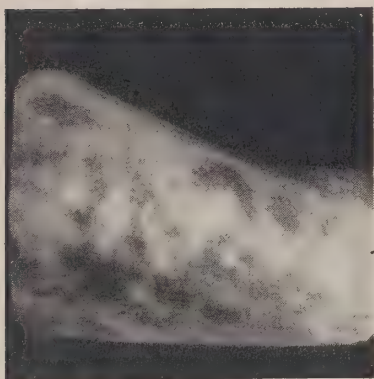
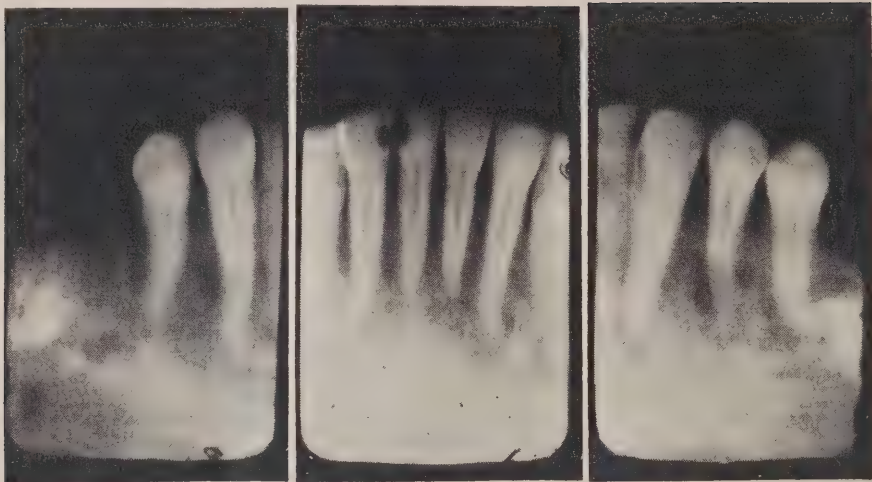
TWO CASES ARE PRESENTED

Case No. 1

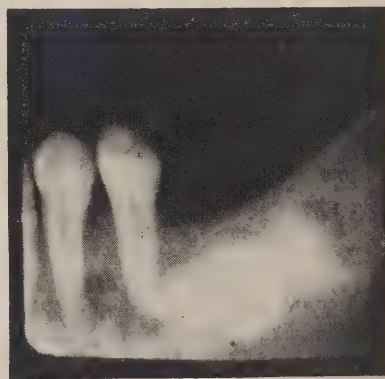
White male, age 64. First seen by one of us (C.I.T.) and referred for surgery. Photograph illustrates Paget's Disease involving the maxilla. Typical type of hypercementosis which is peculiar to Paget's, is observed about the posterior teeth. There is evidence of alternating areas of osteoporosis and osteosclerosis, absence of lamina dura and lace-like trabeculae.



CASE NO. 1



CASE NO. 2



Case No. 2

White female, age 43. First seen by one of us (J.K.) and referred for surgery. Photograph illustrates unusual case of Paget's disease involving the mandible. Case illustrates alternating areas of osteoporosis and osteosclerosis, absence of lamina dura. Cotton wool appearance.

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—*From the Outpatients Dental Clinic, St. Michael's Hospital, Toronto.*

ABSTRACTS



Effects of Filling Materials on the Pulp

by MAURY MASSLER, D.D.S., M.S.

The New York Journal of Dentistry, May 1956.

Bio-assay of new filling materials (as well as sterilizing agents and operative techniques) should replace current empirical trial and error methods of clinical evaluation. Dentistry has developed from a trade into a profession based on scientific criteria. The effects of various filling materials on the pulp should be established before these are offered for clinical uses in humans. The effects of a given filling material on the pulp should be stated clearly on the package by the manufacturer as are its physical characteristics.

Our studies indicate that the rat incisor and rat molar offer a quick and economical method for the bio-assay of new filling materials. Experiments using these teeth as test objects emphasize again the findings already established by previous investigators using the teeth of dogs and humans. They have also revealed a few new details. For example, the injurious action of silicate cements on the pulp is well known, but few practitioners are aware that zinc phosphate cements, particularly the copper cements, are also destructive to the pulp when used in bulk in deep cavity preparations. There is, therefore, good reason to question the use of zinc phosphate cements as a pulp protective base.

On the other hand, these studies suggest that zinc phosphate cement may stimulate secondary dentine formation when used as a thin cementing layer at a distance from the pulp.

These studies suggest that injury to the pulp under acrylic fillings is possibly the result of gross marginal leakage rather than action by the monomer.

The results obtained in these studies emphasize again the importance of cavity depth and the need to place a base under deep amalgam fillings, in order to prevent thermal and galvanic action on the odontoblasts, to prevent darkening of the dentine and delay corrosion of the metal itself, to prevent prolonged sensitivity of the pulp, and to promote the formation of secondary dentine.

The palliative action of zinc oxide and eugenol cements is re-emphasized. Its use as a temporary filling material or cavity base over recently injured pulps is widely practised and is scientifically justified.

Under silicates and self-curing acrylics, where zinc oxide and eugenol cement cannot be used readily, a cavity liner is preferred. A polystyrene-calcium hydroxide liner proved to be the most effective in the series tested.

The Ultrasonic Dental Unit In Paedodontics

by DORAN D. ZINNER, D.D.S., and WENDELL L. WHETSTONE, D.M.D.

Journal of Dentistry for Children. First Quarter 1956.

The attitude of the child and future adult towards dentistry and the intelligent care of his teeth depends largely upon his orientation to his first dentist and his initial experiences in the dental office.

With this responsibility in mind, therefore, it was decided to investigate and evaluate the new ultrasonic dental unit and its possible applications to paedodontics, when it first became available for limited clinical evaluation in the fall of 1954. The ultrasonic dental unit introduced into dentistry a completely new means of utilizing mechanical vibration in the removal of tooth structure with a minimum of heat, noise and vibration. It was felt that the elimination of gross vibration and the reduction of the heat and noise which the instrument makes possible might well prove a boon in dentistry for children.

Now, after a year of routine office use of the ultrasonic dental unit and after continued post-operative checkups on a large number of cases, including six-month postoperative radiographic and general examination, as well as a number of pulp-test follow-ups, we believe the ultrasonic dental unit to be as safe and efficient an instrument as the conventional rotary instrument.

The study includes 123 patients of both sexes, ranging from 3½ to 15 years of age. It extends in time from February 2, 1955 to January 10, 1956.

A total of 437 teeth were observed, prepared, including 51 teeth prepared with rotary instruments and 380 teeth prepared with the ultrasonic dental unit. In all there were 283 permanent teeth and 148 primary teeth prepared and six teeth used as controls.

The study was divided into three phases, each providing for a different degree of post-operative follow up.

(a) Phase I provided for routine clinical examination and bite-wing radiographs taken six months after preparations were completed. This covered 24 patients and 140 teeth. Radiographs and clinical followup revealed no unusual post operative symptoms. There was no evidence of abnormality of developing permanent teeth or their surrounding structures, nor of supporting structures of operated teeth.

(b) Phase II provided for routine post-operative clinical examination short of six-month period, and without radiographs. This group included 85 patients and 259 teeth. No unusual post-operative symptoms reported.

(c) Phase III provided for extensive post-operative examination including radiographs, pulp and thermal tests, on previously uninvolved teeth condemned for orthodontic purposes. Upon extraction, at different time intervals up to two months after preparation, the teeth are to be sectioned for histological study. This group includes 14 patients and 38 teeth, seven of which were prepared with diamond instruments, 25 prepared with the ultrasonic dental unit and six chosen as controls.

Radiographs, pulp and thermal tests, taken every six to eight days until extraction, indicated the continued vitality of all teeth studied with no signs of abnormality in operated teeth, or developing permanent teeth and supporting structures.

Patient acceptance was uniformly high for ultrasonically prepared teeth.

On 123 patients on whom 380 teeth were prepared ultrasonically, five patients required anaesthesia.

On 20 patients on whom 57 rotary preparations were completed, 10 patients required anaesthesia.

On the 20 patients upon whom both rotary and ultrasonic preparations were completed, one required anaesthesia for ultrasonic preparation. Of the same 20 patients, 10 required anaesthesia for rotary preparation.

Of the total of 123 patients treated, four expressed the desire to return to rotary instrument for future dental work. The remainder, a total of 119, reported a distinct preference for the ultrasonic dental unit.

Radical Subgingival Curettage

by A. B. RIFFLE, D.D.S., Rochester, N.Y.

The Journal of Periodontology, April 1956.

The results of radical subgingival curettage are surprisingly and gratifying long-lasting. We now have several hundred teeth which have not been touched in any way except for average home care, still calculus and stain free after ten years and more — teeth in mouths with a history of years of inability to "keep the tartar off their teeth." These teeth have remained firm and completely comfortable to hot, cold, sweet, and sour, despite large areas of root exposed. The gingivae remain in an excellent state of health — thin, tough, immovable and usually free from inflammation. There is almost a complete absence of a gingival trough on most.

Even in our most successful cases, however, there is an occasional temporary period of mild edematous swelling of the gingivae, and sometimes a slight recurrence of sensitivity and mobility. The greater the degree of mouth health attained — the less the frequency and severity of these temporary set-backs. We doubt if any mouth is ever entirely free from them, but fortunately each individual attack seems to do little harm and they are self-controlled in a few days. Over a long period of time, these slight attacks are probably the cause of the deteriorated surfaces we have just removed, and reasonably frequent follow-up visits should be made that slight recurrences may be discovered and checked.

It has been our experience, after over

ten years of constantly using radical subgingival curettage, that the improvement in the health of the periodontium is greater and more permanent than by any other approach to treatment we know. We have had the opportunity to watch many cases who have had from twenty to thirty years of regular and frequent prophylaxis, consisting of thorough scaling and polishing, in the mouths of a group of highly intelligent people who were much better than average in their home care. They consistently grew worse. We have seen a few almost successful cases in our own hands and in the hands of several other men as the result of conscientious conservative subgingival curettage, but none that approach the degree of health we consistently achieve with radical subgingival curettage. We have never seen a case we would accept as being satisfactory as our own following surgical removal of the gingivae. During the last few years we have intentionally avoided using occlusal adjustment, any medication or packs, or specific instruction in home care, that the issue might not become confused. Still we believe the results to be superior to the other approaches. Superior, but not rapid. The achievement of a really healthy mouth is a slow process. It takes from one to five years after treatment before the periodontium finally takes on that hard and clean feel and appearance that signifies success.

Postoperative haemorrhage in oral surgery

by JAMES L. BRADLEY, D.D.S., M.S.D., M.Sc., Springfield, Ill., and
STANLEY JAKUBS, D.D.S., Great Lakes, Ill.

Oral Surgery, Oral Medicine, and Oral Pathology, April 1956.

The greatest incidence of dental surgical haemorrhage is due to trauma and this haemorrhage may be primary, intermediate, or secondary. In the performance of oral surgical procedures, therefore, a careful study of the problem at hand should be made and a detailed plan established to eliminate unnecessary instruments, time, endeavour, and trauma.

There are certain systemic conditions which may predispose to prolonged dental haemorrhage.

1. An anemic patient may have pale lips, pale tongue, and a pale oral mucosa; he may be short of breath and exhibit drowsiness or a tired feeling. These patients usually seek the services of a dentist because of a sore tongue (the bald tongue indicative of Addisonian pernicious anemia).

2. A leukemic patient also will exhibit a pallor but may have, in conjunction, gums which bleed easily and perhaps lymphadenopathy of the cervical chain.

3. In scurvy, the principal oral symptom is not unlike that of leukemia in that the gums are spongy and exhibit a tendency to spontaneous haemorrhage, probably due to increased capillary fragility from ascorbic acid deficiency. There also may be evidence of ecchymosis and petechial haemorrhages subcutaneously and/or submucosally.

4. In obstructive or hemolytic jaundice or jaundice from liver disease, one observes the typical yellowish skin and conjunctiva and the mucosa is, or may be, tinted a pale yellow.

5. In purpura, the oral symptom is easily bleeding gums, although the teeth may be devoid of calcific deposits, and subcutaneous petechiae may be present on the cheeks or extraorally in the submental region down to the upper neck area.

6. In hemophilia, the past and family histories are important. Questioning with regard to these histories should be a matter of routine in contemplated surgical procedures.

Establishing just fees for patients

by LLOYD H. DODD, D.D.S., Decatur, Ill.

The Journal of the American Dental Association, March 1956.

Fair fees breed confidence. Fair fees measured on the basis of high skill, discipline—the will to do one's best with full knowledge of the requirements of the task at hand—may be established on a high level. The patient should be taught the benefits to be derived from optimum dental health, the importance of the dental health services being rendered and what may be expected in terms of health and well being as well as the limitations

that may be forthcoming. A level of fees which allows quality service in all instances, even though not complete service, which allows the dentist and his family to live on at least the average scale of the patients in the community he serves, should be regarded as minimum, fair and just.

Finally, when a just fee is being quoted for patients, the dentist should ask himself this question: Would I be willing to pay a like fee for the same service, knowing what I do about dentistry?

Caries Incidence and Enamel Defects in Areas with Different Levels of Fluoride in the Drinking Water

by JEAN R. FORREST, L.D.S. (Glasg.)

British Dental Journal, April 17, 1956.

A study was carried out in four areas in England, West Mersea, Burnham-on-Crouch, and Harwich in the County of Essex, and Slough in Buckinghamshire. West Mersea has the highest known fluoride content in this country (5.8 p.p.m.) and Burnham-on-Crouch, a nearby town, has 3.5 p.p.m. In Harwich the fluoride level averaged 2.0 p.p.m. until a few years ago, but additional sources have now been brought in, making the present concentration 1.6 p.p.m. Slough water has remained unchanged for many years and the fluoride concentration averages 0.9 p.p.m.

Saffron Walden and district, in Essex, and Soneleigh and Malden West, in Surrey, were chosen for comparison with these fluoride areas as their water supplies contained no more than a trace of fluoride and the school populations were similar in character.

The groups studied included 324 children aged 12-14 years in the fluoride areas and 259 children also of the same age in the non-fluoride areas.

Caries experience was found to be markedly lower in the fluoride than in the non-fluoride areas. The incidence and severity of fluoride mottling was directly related to the amount of fluoride in the water.

There did not appear to be any relation between the standard of nutrition and incidence or degree of mottling.

In Slough, with 0.9 p.p.m.F., the incidence of caries was as low as 2.6 D.M.F. teeth per child, 30 per cent of the children were entirely free from caries and mottling was negligible, the community index of mottling being only 0.17, well below the threshold of objectionable mottling.

In the non-fluoride areas the incidence of caries was 6.6 D.M.F. teeth per child, 4-8 per cent were caries-free and the index of mottling was considerably higher than at Slough and within the objectionable range.

The optimal level of fluoride for caries protection and good tooth formation appears to be about 1 p.p.m.

Antimicrobial therapy in the practice of dentistry

by HARRISON F. FLIPPIN, M.D.

Pennsylvania Dental Journal, March 1956.

The recent prodigious advances in the field of anti-infective agents exert a profound influence on the practice of dentistry as, within the span of less than a quarter of a century, it has become possible to effect dramatic cures in a large percentage of patients suffering from diseases previously dreaded, as well as to prevent diseases which formerly proved

disastrous. Certainly, the advent of these antibacterial agents represents one of the greatest discoveries of recent years, but, just as each new discovery in dentistry increases our knowledge and opens up new avenues of approach, it simultaneously imposes new challenges and increases our ignorance. The antimicrobial agents are no exception to the adage—"All is not

Gold that Glitters." Administration of these agents has resulted in certain undesirable consequences which constitute new and serious problems in the dental care of patients. It is impossible at this time to estimate the true significance of the undesirable consequences of antimicrobial therapy. In view of the ability of these drugs to sensitize individuals, we may see in the future more severe reactions following their use. Likewise, more microorganisms may develop resistance to these drugs and with the continued dislocation of the normal bacterial flora of the body by the use of these drugs more diseases due to organisms which heretofore were not harmful may result. No doubt it is a matter of time before science finds the complete answer to these unsolved problems, with their realization depending largely on the clarification of the mechanism by which these agents produce their effects. From a thorough insight into this phenomenon will come the ability to construct chemo-

therapeutic agents for any and every infectious disease and also may endow the dental profession with drugs harmless to the patient.

Until such time as an ideal chemotherapeutic agent is developed the oral surgeon should limit the use of these life-saving agents to diseases in which their therapeutic effectiveness has been demonstrated and to refrain from employing them prophylactically except when the complication to be avoided is a serious one and one which occurs frequently in the absence of precautions. Furthermore, in spite of the proven therapeutic and prophylactic value of the antimicrobial agents, they are not to be used to the exclusion or neglect of other established forms of therapy. Certainly, the danger signals have been hoisted and, looking into the future, we may find these antimicrobial agents will prove to be insidious purveyors of disease, in that Nature notoriously brooks interference badly and often in a subtle way defeats Man before he knows of his undoing.

The effect of a stannous fluoride-containing dentifrice on dental caries in adults

by JOSEPH C. MUHLER, ARTHUR W. RADIKE, WILLIAM H. NEBERGALL, and HARRY G. DAY.

Journal of Dental Research, February 1956.

The effect of a stannous fluoride-containing dentifrice has been studied in a group of university students ranging in age from 17 to 36 years. After using the dentifrice for 6 months there was a 50.4 per cent reduction and at the end of 1 year a 41.6 per cent reduction in caries rate on the basis of new DMF surfaces. In terms of DMF teeth, the reductions were 55.0 and 53.7 per cent at the end of 6 months and 1 year, respectively.

Reductions of 75.1 and 61.1 per cent were found in new DMF surfaces in previously carious teeth, indicating, as in studies on children, that stannous fluoride is quite different from sodium fluoride in its effect on the teeth.

The data indicate that the use of the stannous fluoride dentifrice and the practice of good toothbrushing habits are additive in their effects against dental caries.

ETHICS

Obligations to professional confrères

In an article of this nature space does not permit the proper development of each one of these separately, so that an endeavour is made to develop Section 7, paragraph (c) which is felt to be the most abused and which tends to disrupt the unity in our profession more than anything else.

Paragraph (c) states: "In the instance of patients referred for consultation or emergent treatment, the dentist to whom they have been referred should be most cautious in his relationship to such patient and render only such treatment and comment as has been specifically requested by the original dentist". The dentist who has patients of his confrère referred to him for emergent treatment should be only too happy to look after such emergencies. It not only shows that his confrère respects his judgment and ability but also gives the patient confidence in the dentist to whom the patient has been referred because of the fact that that person is a patient of the dentist making the referral. People become patients of a dentist because of their confidence in the ability and integrity of that individual dentist. It is therefore most ungracious and unjust for any practitioner to destroy or lessen that patient's confidence in his or her dentist either by direct or indirect word or implication. Let us now take a hypothetical case. Dr. Jones who plans on being out of town for some time has instructed his nurse to refer all patients to Dr. Smith for emergent treatment, having previously made arrangements with Dr. Smith to perform this service. Patient A, who has lost a filling, is referred to Dr. Smith who not

only places a permanent filling in the tooth involved but indicates to her that several other teeth need attention and that X-rays are indicated, which service he would be glad to perform. This dentist, although he might be thus rendering a justifiable service to the patient, nevertheless, has proceeded without knowing whether or not his confrère has reserved time for the patient on his return to complete the necessary work. Dr. Smith in so doing is considered unethical and has thus destroyed the confidence of the patient in the integrity and ability of Dr. Jones. The proper approach would have been for Dr. Smith to restore the tooth involved, X-ray if necessary as an aid in diagnosis, and refer said patient back to Dr. Jones. If Dr. Smith noticed other teeth which needed attention and which he felt Dr. Jones had overlooked he might call Dr. Jones and diplomatically inform him of his findings. It is better to communicate the findings through the dentist directly than through the patient.

To-day we are concerned with tolerance and unity in our profession. This can only be brought about by working to insure always stronger, vibrant living faith in our personal lives so as to help improve and elevate our fellow practitioner. Men are governed and souls are won not by words alone but by the reality of things. It is example that strengthens the credibility of a code of ethics and gives it life. You, and you alone, have the privilege of educating your fellow practitioner to know himself and his confrères. Act so that every action of yours could be adopted as a universal rule of conduct not only for your fellow practitioners but for all mankind.

HOSPITAL DENTAL SERVICES

Crisis!

Dentistry is a rapidly growing profession and as the profession has developed its members have accepted increased responsibilities in the communal health program. As our profession has realized its responsibilities to the public, more and more dental services have been developed in hospitals. These services according to hospital administrators, members of the medical profession and the public, have been offering satisfactory professional care. However, it now appears because the Provincial Hospital Acts make no mention of dentistry or dentists, that any dental service rendered by a dentist in hospital is illegal. Solicitors for the provinces claim that dentists cannot admit, treat or discharge patients except under the authority of a physician. This has placed hospital dentists in a position which is fast becoming untenable. The situation is, that a dentist is licensed to perform certain operations under the

Provincial Dental Act but if these same services are performed in a hospital by a dentist they are illegal. This situation has arisen mostly in the larger hospitals on instructions from the Provincial Departments of Health and the Joint Commission On Accreditation of Hospitals.

Following such direction the Canadian Dental Association has received letters from hospital superintendents questioning the reason for such action in the past few months by these authorities and seeking a remedy for the situation.

Dental Departments in hospitals not only provide a very necessary health service to the public but provide lectures in dentistry to nurses in training, post-graduate medical students, undergraduates and post-graduate dental students.

It is a crisis! Can we continue to provide these services when our professional status in hospitals is such that we cannot prescribe an aspirin unless endorsed by a physician?

Tooth samples were obtained from an endemic fluoride area and the fluoride content determined before experimentation. Various means were used to separate the organic and inorganic fractions of these samples. This was followed by a quantitative determination of fluoride in the separated phases.

The results strongly indicate that most, if not all, fluoride which is to be found in human teeth is associated with the inorganic fraction.

Journal of Dental Research, April, 1956.

EDITORIAL

The survey committee—an agency for advancement

In 1950 the Council on Dental Education of the Canadian Dental Association appointed a Survey Committee to examine and report on the dental schools of Canada. Preliminary arrangements were made by the Council to enlist the assistance of the Kellogg Foundation. The Council on Dental Education of the American Dental Association, beginning in 1940, surveyed the dental schools in the United States and classified them for purposes of accreditation.

The committee appointed to assume this heavy responsibility was composed of Dean A. C. Lewis, of the Ontario College of Education, the Chairman, Dr. Arthur L. Walsh, a former Dean of the Faculty of Dentistry of McGill University, and Dr. Harvey W. Reid, a past-president of the Canadian Dental Association, and the information to follow is largely the substance of their observations. The committee members, without delay, set about to acquaint themselves with the tasks that lay before them. The responsibility of the Committee was to examine the five dental schools and make a confidential report to the Head of the University and to the Dean of the Faculty of Dentistry, concerned; and finally to make a general report to the C.D.A. Council on Dental Education.

Beginning with the 1950-51 session, the committee surveyed each of the schools three times — in 1950-51, in 1953-54, and in 1955-56. The ultimate objective of the study was to report to the Council on Dental Education on the effectiveness of the programme of dental education in Canada today.

The Survey Committee, after acquaint-

ing itself with the plan employed in the United States to inspect the dental schools for the purposes of accreditation, adapted the American plan for use in the Canadian schools. It was not the function of the Canadian committee to visit the schools with a view to accreditation because accrediting agencies have little or no place in the Canadian scene. Accreditation in Canada has usually been carried out by American committees to serve their own purposes of determining whether or not an exchange of credits could be freely made. In Canada the National Conference of Canadian Universities approves of an institution of higher learning by admitting it to membership in the Conference after a favourable report by a committee of the National Conference charged with the responsibility of inspecting the institution. This procedure is a form of accreditation. All five universities in which there is a dental school have long since been members of the National Conference.

Each report submitted by the Survey Committee contained specific recommendations for improvement of the total programme. Many of the recommendations have been implemented and there has been ample evidence that there exists the keenest desire in all five universities to raise the level of dental education so that it will be equal to that found anywhere.

The Survey Committee gave consideration to ten basic topics having a bearing upon the essentials of a satisfactory programme of dental education — admission of students — course of instruction — subjects of study — hospital relationship — relationship between faculties of den-



THE SURVEY COMMITTEE OF THE COUNCIL ON DENTAL EDUCATION

L to R: Dr. Harvey W. Reid, Dean A. C. Lewis, chairman, and Dr. Arthur L. Walsh.

tistry and medicine — staff of faculty — university relationship — financial administration — building and equipment — library facilities.

The Council on Dental Education has succeeded in establishing the recognition by the dental schools of a basic minimum requirement. The pamphlet on "Requirements for the Approval of a Dental School" has had the desired effect of standardizing the basic programme of dental education without taking away from the schools the freedom to present their courses as seems best for each to meet its own objectives.

None of the schools is unaware of the immediate problems with which it is faced. There are few, if any, difficulties attendant with the curriculum. The problems which do exist, however, lie in the direction of more and better-trained staff, of increased numbers of full-time appoin-

tees, and of improving and increasing the plants and their equipment. It is significant that there has been no increase in facilities for over a quarter of a century, yet our population has been augmented by approximately five million persons in the interval. Schools for medical instruction have increased from seven to twelve during the same span of time. Increased accommodation of existing schools and the establishment of new schools are urgent problems. Six of our ten provinces have no dental school and are not able to secure enough dentists for their needs.

The Survey Committee recommended to the Council on Dental Education that all five schools be approved and that these schools look to the C.D.A. Council on Dental Education to make sure that all schools continue to observe the minimum requirements which are now or may hereafter be established.

It is difficult to estimate these most significant contributions of the Survey Committee. We must recognize that the prime source of motivation and stimulation of the profession comes from the schools. There the ideals and responsibilities of dental practice are inculcated and the future of the profession is dependent upon

the success of the teaching institutions. Through the efforts of the Survey Committee, the Council on Dental Education has been able to take such actions as it deemed necessary to elevate the standards of dental education in Canada not in any sense as an invasion of the rights of the various schools but as an agency for their advancement.

Book Review

Fractures of the Facial Skeleton By N. L. Rowe, F.D.S.R.C.S., L.R.C.P., M.R.C.S., L.M.S.S.A., H.D.D.R.C.S., and H. C. Killey, F.D.S.R.C.S., L.R.C.P., M.R.C.S., L.M.S.S.A., H.D.D.R.C.S. Published by The Macmillan Co. of Canada Ltd. Pages: 923. Price: \$20.50.

This book is the most comprehensive text ever written on the treatment of maxillo-facial injuries.

Its style of writing is conducive to easy reading so that the critic found no difficulty in scanning it's nine hundred pages. The book covers all phases of pre-operative considerations, treatment, laboratory techniques and post-operative complications. It is well illustrated by drawings and photographs and the bibliography and index are most complete.

Douglas Tanner.

The Library

The Library of the Association consists of practically all the books related to dentistry which have been published during the last ten years. A considerable number of volumes published earlier are also available.

The Library has been made possible through the generosity of interested members of the Association. All monies received are used for the purchase of books. The Association bears the cost of administration.

For the benefit of members and all others interested, the library is open daily from 9.00 a.m. to 5.00 p.m. except Saturdays and Sundays. All dental periodicals are available.

Books may be borrowed by the membership by writing: Librarian, Canadian Dental Association, 234 St. George St., Toronto.

Additions:

ACKERMAN, L. V.: Surgical pathology. 1953. 836 pp. illus.

ADAMS, C. P.: The design and construction of removable orthodontic appliances. 1955. 96 pp. illus.

BUNDESVERBAND DER DEUTSCHEN ZAHNARZTE E. V.: Informationen über Zahnärztliche Arzneimittel. 1955. 149 pp.

GRUMME, M.: Basic principles of parliamentary law and protocol. 1955. 68 pp.

JOHNSON, C. N.: Principles and practice of filling teeth. 3rd ed. 1906. 299 pp. illus.

LICHTENSTEIN, L.: Bone tumors. 1952. 315 pp. illus.

MCCOY, J. D., and SHEPARD, E. E.: Applied orthodontics. 7th ed. 1956. 336 pp. illus.

ROWE, N. L., and KILLEY, H. C.: Fractures of the facial skeleton. 1955. 923 pp. illus.

The Association

Council Approves Canadian Dental Schools:

At the meeting of the Council on Dental Education, Canadian Dental Association, held April 24-25 last, all five Canadian Dental Schools were approved. In 1948 the Council adopted minimum requirements for the approval of a dental school. This statement was distributed to those concerned with dental education in Canada. A survey committee was organized by the Council in 1950 under the chairmanship of Dean A. C. Lewis of the College of Education, University of Toronto. Doctors A. L. Walsh of Montreal and Harvey W. Reid of Toronto served as the other members of the committee. The Kellogg Foundation provided financial assistance for the survey work.

Between 1950 and 1956 the survey team officially visited all the dental schools on three separate occasions. After each visit a confidential report of the findings and recommendations was prepared and forwarded to the President of the University with a copy to the Dean of the dental faculty. The study presented by the Survey Committee at the recent Council meeting showed remarkable progress in meeting the requirements as laid down for the approval of a dental school. The Committee recommended that the five schools be approved and the Council adopted the recommendation.

Health Insurance:

The Health Insurance Studies Committee presented a revised statement of policy on the health insurance question at the Association's Annual Meeting. Recent events have made necessary a clear statement by the dental profession of its position. In reality, a health insurance movement has been in progress for sev-

eral years in the hospital and medical fields. Various plans are in operation, both voluntary and compulsory. A study of the various plans operating in Canada has just been published entitled 'The Administration of Health Insurance in Canada' by Malcolm G. Taylor.

Chicago Launches Fluoridation:

Water fluoridation was started on May 1st in Chicago, the second largest city in the United States. Initially, the programme will cover 1,300,000 residents of Chicago's South Side and 24 suburbs. It will be about July 1st before fluoridation equipment is installed and operating for the remaining 2,800,000 residents of the city and the 27 suburbs which purchase water from the City of Chicago. Mr. James W. Jardine, the city's water commissioner states that the Chicago water system pumps more water daily than any other system in the world. Total cost of fluoridation equipment for Chicago has been estimated at \$475,000.00. The annual cost of labour and chemicals will be about \$650,000.00 or 12½ cents per capita. Fluoridation in Chicago increases to about 25 million the number of urban residents routinely drinking fluoridated water in the United States. The number of municipalities where fluoridation is in operation is now 1177.

Number of Dentists in United States:

The American Dental Association has released statistics stating that there are 97,529 dentists in the United States. Of these, 90,239 are civilian dentists, and 7,290 are serving in the armed forces, public health service and veterans' administration. Approximately 87,000 are actually engaged in professional activities and the remainder retired. It is estimated that there was one dentist for every 1,669 persons in the United States.

Hearings on New Brunswick Bills

Two bills were presented to the New Brunswick Legislature during March, which if enacted, would have been detrimental to the dental profession. The first bill proposed to delete the injunction clause from the dental act. The second requested legislation to permit two dental technicians to practise prosthetic dentistry. Hearings were heard before the Corporations Committee on these bills on Friday, March 23rd and again on Tuesday, March 27th. Arguments for both bills were made to the effect that the named technicians were having their livings taken away from them. The present dental act in New Brunswick was enacted two years ago. A case against one of the dental technicians named in the second bill was in the courts at the time of the application. Arguments against the bills were presented by the solicitors for the New Brunswick Dental Society and the C.D.A. Secretary, with approximately 25% of the dentists practising in New Brunswick present at the hearing. After deliberation in private the Corporations Committee reported back to the legislature throwing out the bills.

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W. K. Kellogg Foundation Assists Dalhousie

The W. K. Kellogg Foundation recently announced its first payment on a five-year commitment of \$178,213 to support the expansion and further development of the teaching program and facilities of the Dalhousie University Faculty of Dentistry. These funds to the Halifax, Nova Scotia, institution will be used to increase the full-time staff of the Dental School and to meet a part of the cost of the new building and equipment for which construction is expected to begin this summer. It is anticipated also that this assistance from the Foundation will stimulate the further development of a program of regional cooperation by the Maritime Provinces, for the continued support of the dental and medical schools of Dal-

housie University, which are the only institutions of this kind in the entire region.

The Foundation has previously assisted with a survey and consultation program for the Canadian dental schools, under the auspices of the Canadian Dental Association's Council on Dental Education, which is expected to lead this year to the establishment of a system of accreditation for the Canadian dental schools. The findings of the survey consultants, as a result of their visits to the several dental schools, pointed to the critical needs of the Dalhousie school, which is the smallest and one of the most isolated of the five schools in Canada. Serving the million and a half population of the Maritime Provinces, this private University has made a distinguished contribution to the health, education, and welfare of the people of this region. Until recent years, the University had received no support from tax funds, but each of the governments of the four Maritime Provinces is now making at least a token contribution to the support of the medical and dental schools. The Province of Nova Scotia has agreed to provide a substantial subsidy (\$150,000) toward the cost of the new building for the dental school, and it is anticipated that approximately \$215,000 will be made available by the federal government through its health grants program. Additional funds for the new facilities, which will involve a total cost of about \$600,000, are expected to be secured from the public subscription campaign being conducted by Dalhousie University.

The Faculty of Dentistry, under the terms of the Foundation's commitment, will add one new full-time staff member each year during at least the next three years, to strengthen its teaching program, in anticipation of expanding its enrollment from the current level of 15 students per class to an entering class of 25 students. Until recently, the school had only one full-time faculty member (the Dean), and its physical facilities were inadequate for even the small educational program it was conducting. The Foundation's assistance will enable the school to

carry out all of the principal recommendations made by the survey team of the Canadian Dental Association. It is anticipated also that the aid being provided by the Foundation will lend encouragement to the further development of a program of regional cooperation and subsidization by the Maritime Provinces, which should permit both the dental and medical schools to expand their educational programs so as to more nearly meet the pressing needs of this area for qualified personnel in the health field.

News Item

The Illinois Supreme Court on March 22 unanimously upheld the constitutionality of an Illinois law prohibiting dental laboratory technicians from dealing directly with the public. The suit was brought by the Chicago Dental Society against 36 Chicago dental laboratories. The ruling upholds a permanent injunction against the laboratories preventing them from performing prosthetic services for the public and from using advertisements directed at the public.

General News

Nine centennial awards, for "outstanding contributions" to dentistry were presented at the 100th anniversary meeting of the Michigan State Dental Association April 16-19 in Detroit. The awards were conferred on Dr. Bernard C. Kingsbury, of San Francisco, A.D.A. president; Dr. Marcus L. Ward, of Ann Arbor, Mich., past-president of the A.D.A.; Dr. Thomas D. Dow, of Ada, Mich.; Dr. Harold Hillenbrand, of Chicago, secretary of the A.D.A.; the late Dr. Charles Henry Land, Army Secretary Wilber M. Brucker, of the A.D.A.; the late U.S. Sen. James Couzens, the W. K. Kellogg Foundation, of Battle Creek, Mich., and Mr. Charles S. Mott, of Flint, Mich. An honorary membership was conferred on **Dr. Don W. Gullett**, of Toronto, secretary of the Canadian Dental Association. Centennial citations were presented to Mr. Robert M. Kerr Sr., founder of the Kerr Manufacturing Co., and Mr. George P. Caulkins, president of H. J. Caulkins and Co.

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Water fluoridation was started on May 1 in Chicago, the second largest city in the U.S. Mayor Richard J. Daley turned the valve at a South Side pumping station officially launching fluoridation. The ceremonies were attended by city officials, officers of dental and medical organizations and other civic leaders. Initially, the program will

cover 1,300,000 residents of Chicago's South Side and 24 suburbs. It will be about July 1 before fluoridation equipment is installed and operating for the remaining 2,800,000 residents of the city and the 27 additional suburbs which purchase water from the city of Chicago. Dr. G. W. Solfronk, president of the Chicago Dental Society, and Dr. Robert Pollock, treasurer of the Illinois State Dental Society, were among those participating in the ceremonies. Representatives of the A.D.A. at the affair included Dr. H. Trendley Dean, world authority on fluoridation and secretary of the Council on Research, and Dr. J. Roy Doty, secretary, Council on Dental Therapeutics.

The Chicago water system pumps more water daily than any other system in the world according to Mr. James W. Jardine, the city's commissioner of water and sewers. Total cost of the fluoridation equipment for Chicago has been estimated by Mr. Jardine at \$475,000. The annual cost of labor and chemicals will be about \$650,000 or about 12½ cents per capita, he said. Fluoridation has been under consideration in Chicago for many years and was approved by the city council in June, 1954, by a vote of 37 to 8. The start of fluoridation in Chicago increases to about 25 million the number of urban residents routinely drinking fluoridated water. The number of communities where fluoridation is in operation is now 1,177.

Economic Security

Succession Duty

by W. D. BLAIR, Q.C.,* Director, Succession Duty Office, Province of Ontario.

PART II

There are some exemptions of a personal character which should be mentioned. Under the Ontario Act there is an exemption of a non commutable annuity or income paid for by the deceased during his life and effected otherwise than by Will and enjoyed by the wife or dependant father, mother, brother, sister or child to the extent of \$1200 per annum with respect to any one person and to the extent of \$2400 per annum in the aggregate. Such an annuity or income may be provided by an annuity contract or by an appropriate settlement or option of payment of life insurance. It is to be noted, however, that it cannot be made effective by Will and it should be noted also that such an annuity should not be made payable to the executor but to the beneficiary direct.

Under the Dominion Act there is an exemption, which applies in all cases, of \$20,000 to the widow and of \$5,000 to each child under 18 years of age or over 18 years of age if dependent upon the deceased on account of mental or physical infirmity.

Rates of duty are based upon the following factors, first the size of the estate, second the relationship of the beneficiary, and third the amount which the individual beneficiary receives. In an earlier article in this series dealing with the subject of Wills, it was shown how it was possible to make testamentary provision which would to some extent control the effect of these factors.

The actual impact which the payment of duty will have on an estate should also be discussed. In the first place it should be pointed out that immediately upon the

death, all of the assets with certain exceptions to permit payment of limited amounts out of bank accounts and under insurance policies, are automatically tied up and cannot be dealt with except with the consent of the Succession Duty Departments. It is the practice of the Departments to require that suitable security be provided for the estimated amount of the duty before the bulk of the assets are released. In Ontario this security, substantially speaking must be provided in cash, and while under the Dominion practice security may be provided in other forms, the desirability of having sufficient liquid assets to provide security is readily apparent.

Under both the Dominion and the Ontario Acts, the duty is, generally speaking, payable within six months of the death. This again points up the desirability of having, if possible, sufficient liquid assets to take care of the duty.

Where a beneficiary is given income for life, or for a shorter period, or is given an annuity, there is an exception to the general rule that the duty is payable within six months of the death. Under the Dominion Act the duty in these cases may be paid in four equal annual instalments, and under the Ontario Act in annual instalments which, dependant upon the circumstances, may be as many as ten. An exception is also made in the case of the duty on future interests, which in most cases may be paid either within six months of the death or when such future interests come into possession, at the option of the estate. For example, suppose that the Will gives the income of the estate to the widow for life, and provides that on her death the estate is to be divided among the children. In that case the duty on the children's interests may be paid at the option of the estate within the

*Mr. Blair is a recognized authority on Succession Duties and was selected by the Law Society of Upper Canada to write this article. Ed.

six months' period, or upon the death of the widow. If the former option is chosen, the capitalized value of the prior life interest is deducted from the estate or fund, to give the value of the remainder interests which the children take and the duty on these interests is calculated on the value. If the latter option is taken, however, duty is paid on the whole value of the estate at the time that it comes into the possession of the children without any allowance for the duty paid on the widow's prior life interest.

The following examples of duty calculated under the provisions of the Ontario Act will illustrate the incidence of duty. First let us suppose an estate of a net value of \$75,000. The duty on such an estate if left to a widow outright, would be \$4,743.45. If the same estate were left to the widow for life, assuming her age to be 65, with remainder to the children, the duty would be \$3,018.75, made up of \$1,174.05 on the widow's interest and \$1,844.70 on the remainder interest to the children. Again taking an estate of \$100,000 and assuming a distribution to the widow alone the duty would be \$8,625. If to the widow for life, with remainder

to two children, the total duty would be \$5,750. To vary the circumstances, let us assume that the testator's beneficiaries are a sister and her children. On an estate of \$30,000 all passing to a sister the Ontario duty would be \$3,492; on an estate of the same size passing to a sister age 65 with remainder upon her death to two children, the total duty would be \$2,871.42. Corresponding figures to those given in the above examples would be obtained in calculations under the Dominion Succession Duty Act.

Under the provisions of both the Dominion and Ontario Acts each beneficiary or donee is liable for his own duty and it is not an obligation of the estate as such. It is possible, however, to provide by Will that the duty shall be borne out of the estate to the relief of the individual beneficiaries. Considerations arising out of this point may be of extreme importance in considering the provisions to be made in a Will. This matter was dealt with in the article in this series on Wills (April and May, 1955, issues of the "Journal", pp. 249, 312) to which reference should be made but it is mentioned here again in order that in view of its importance it may not be overlooked.

The schools (dental) must first develop sound methods of selecting students whose motivating interests as well as their educational backgrounds fit them for dental education. In a recent study of the factors that motivate students to study medicine, dentistry, nursing, pharmacy, dental hygiene and public health, it is very apparent that many dental students are attracted to dentistry because of such material advantages as expectation of financial reward, the independence of a dentist, favorable hours, and so forth. The dental profession must share the school's responsibility in making the practice of dentistry attractive to those young people with a strong social consciousness who are seeking a way of life which offers continued intellectual challenge as well as the advantage of material gains.

The Provinces

Alberta

The regular meeting of the **Calgary and District Dental Society** was held on Monday, February 6, 1956, in the Sun Room of the Palliser Hotel. Forty-six members attended and president Dr. Ross Upton was chairman.

Guest speaker of the evening Dr. M. J. Lipkind addressed the meeting on the subject "A Clinical Approach to Therapy and Technic in Endodontics." The speaker emphasized the various factors involved in successful Root Canal Treatment and developed the important roles played by careful diagnosis and case selection.

He stressed organization of materials and instruments as one of the major factors in simplifying treatment. Aseptic technic, careful and thorough instrumentation and the use of the polyantibiotics as sterilizing agents in root canal therapy all contribute to the successful conclusion of root canal cases.

The presentation was illustrated and technics amplified with color slides of clinical cases of both conservative and root resection procedures. Dr. Lipkind was introduced to the meeting and thanked by chairman Dr. Ross Upton.

A new executive as follows was elected for the 1956-57 year:

President—Dr. G. S. Swann

Vice President—Dr. M. J. Lipkind

Secretary—Dr. W. A. Nixon

Treasurer—Dr. D. L. Thompson

Dr. James Zimmerman presented a complete and factual report on the status of fluoridation in this city and province.

In his eloquent address Dr. Zimmerman covered all salient features of the question including origin of study, present acceptance of fluoridation programs in various cities and reports of municipalities already using such a program.

Dr. Zimmerman cited the many authoritative scientific bodies that have endorsed fluoridation of communal water supplies.

The meeting to this point was covered by representatives of the two Calgary newspapers.

Dr. Zimmerman then gave a "behind the scenes" report on the meeting of the Calgary Board of Health on January twenty-third, 1956, where the Calgary and District Dental Society and Calgary and District Medical Society were represented by Dr. E. Thorsen, Dr. Alec Duncan and himself.

After a thorough discussion the meeting was adjourned.

The April meeting of the **Central Alberta Dental Society** was held in Red Deer with Dr. S. Fleming, president, in the chair. He introduced Mr. Bob Bannister of Red Deer who outlined the "Saskatchewan Dental Services" plan.

The following slate of officers was elected for the 1956-57 term:

President—Dr. Don Culham, Ponoka.

Vice-President—Dr. Al. White, Red Deer.

Sec'y-Treas.—Dr. Murray Boyce, La-combe.

Directors—Dr. Dalton Deedrick, La-combe; Dr. Lloyd Wright, Stettler; Dr. Al. Goodman, Red Deer, and Dr. Fred Pedlar, Olds.

Dr. C. D. Husband of Red Deer, introduced the guest speaker, Dr. H. R. MacLean of Edmonton, who has recently completed a year of post-graduate study at the University of California under Dr. Gordon Fitzgerald. The speaker's popularity and esteem were reflected by the warm applause.

Dr. MacLean's subject was "Irradiation Syndrome", and he covered this field in its entire complexity. He first spoke of the physiological effects as related to the human body, with well-documented slides to drive home the lesson. He then gave a comparative analysis of the safety of long cone versus short cone technique in radiography.

Dr. MacLean stressed the potential danger to dentists, dental personnel and patients alike with the onus of responsibility clearly resting upon the dentist. The speaker intimated that this responsibility has undoubtedly been treated too casually in the past and added that further neglect might lead to difficulties for the dental profession and the practitioner.

Appreciation for Dr. MacLean's timely address and his keen interest in assisting the profession with this problem was voiced by Dr. Frank Leboldus of Rimbey, who responded for the society.

M.S.B.

Dr. E. R. Upton, Calgary was chosen president of the **Alberta Dental Association** at a meeting of the organization's official board in Convocation Hall, University of Alberta recently. He succeeds Dr. A. C. Ahrens of Lethbridge.

Dr. P. H. Kendal, Edmonton, was appointed president elect to succeed Dr. Upton in 1957.

Elected to the board of directors were Dr. Lorne Brooks, Calgary; Dr. A. Grey, Lethbridge, and Dr. M. Warmock, Fairview.

Dr. M. Thompson, of Beverly Hills, California, conducted a two-day clinic on a technique of making impressions for gold inlays in teeth, for dentists attending the meeting from various points in Alberta.

Dr. R. R. McIntyre, President of the Canadian Dental Association was honored at a dinner meeting of the **Calgary and District Dental Society** held in the Palliser Hotel Friday, March 9, 1956. The meeting was the annual "President's Visitation",—at which the President of the association reports on the year's activities of the national body.

Travelling with Dr. McIntyre was Dr. Don W. Gullett, Secretary of the Canadian Dental Association. Their visit in Calgary all but completed the series of meetings that had carried them from Newfoundland to British Columbia.

Dr. McIntyre's visit to Calgary was of special significance in that he addressed members of his home Society.

In honoring Dr. McIntyre on behalf of the Calgary and District Dental Society, Dr. W. Ross Upton, President, presented him with an engraved silver cigarette box in recognition of his many years of devoted service to the Dental profession.

The program consisted of a Panel Discussion on Organized Dentistry. Members of the Panel were Dr. R. R. McIntyre, Dr. Don W. Gullett and Dr. E. R. Upton, President Elect of the Alberta Dental Association. Dr. W. Ross Upton acted as Moderator.

In his address, Dr. McIntyre called the headquarters of the Canadian Dental Association in Toronto a credit to the dentists of Canada. He described it as an office managed with efficiency and despatch by the Secretary, Dr. Gullett. From this office all business of the association is conducted. The *Journal of the Canadian Dental Association* is compiled and edited, and from there large quantities of scientific material is distributed across Canada.

In explaining the many important facets of organized dentistry in its relationship to modern society, Dr. McIntyre described the position occupied by Canadian dentistry relative to world dental affairs as being highly respected. The Canadian Dental Association provides a yearly grant to the *Fédération Dentaire Internationale*, an international body formed some sixty years ago

and reorganized in the post-war period. It is the official dental advisory body to the World Health Organization and has a forty-two nation membership. Dr. E. R. Upton presented a rundown on the expenditures of the Alberta Dental Association, showing how the major functions of the Association are budgeted. These included legal expenses, costs of investigation, costs of Clinicians, the Benevolent Fund and Dental Health Week.

Dr. Gullett spoke on a wide range of subjects of interest to the profession. He described how the *Journal of the Canadian Dental Association* enjoys an enviable international reputation and circulation due to the high calibre of this scientific publication and to the fact that it is published in both English and French.

Dr. Gullett stated that the Association recommends and approves the C.D.A. Pension Assurance Plan and believes it to be the best available. Administrative cost of this plan runs 2.6 per cent as compared to higher percentages for commercial companies.

In speaking on Dental Research, Dr. Gullett said that in the interests of better dental services increasing attention is being paid each year to this important work. Last year some \$200,000 was spent on research projects. In order to get qualified research personnel, the Association has set up "Studentships" to assist candidates taking graduate studies in the sciences.

The Library of the Canadian Dental Association was described as being the finest of any of the professions on the continent. It is financed completely by private subscription of the dentists of Canada. It belongs to the profession and serves dentists all across the country.

Dr. Art Steeves expressed the appreciation of the meeting to Dr. McIntyre and to Dr. Gullett for their fine addresses of the evening and their untiring efforts on behalf of dentistry.

Fifty members and out-of-city guests of the **Calgary and District Dental Society** gathered in the Sun Room of the Palliser Hotel on Monday, April 9th, 1956 to hear Dr. Morris Carnat speak on "Medical Hypnosis." Dr. W. Ross Upton presided.

Dr. Jim Gibson, in introducing Dr. Carnat to the meeting described the speaker's subject as one having captured widespread interest amongst professional and lay personnel alike.

Dr. Carnat, a specialist in Psychiatry, gave as reason for his choice of subject the vast curiosity now being aroused by recent

publicity in hypnosis and for its applied interest in the field of dentistry.

The speaker developed the history of the use of Hypnosis and Hypnotism from ancient times, where it played a part in certain religious practices, through mediaeval days up to the present time. Since World War II days, psychiatrists and psychologists have been attempting to correlate findings and place the study on a scientific basis, he stated. Dr. Carnat emphasized that the major requisite for success in practising hypnosis is co-operation between subject and doctor with the existence of complete understanding and mutual confidence.

He described the Four Techniques generally employed as being:

1. Standard—or sleep method wherein the subject has reduced sensory intake and motor output.
2. Drug induced method of Hypnosis—by administering barbiturates intravenously thus shortening time of hypnotic induction. This was commonly used during World War II as a time saver.
3. Hypnoidization State—Hypnosis induced use of bright light producing a normal dreamlike state between full sleep and awakening.
4. Waking Hypnotic State—induced by using a repetitious modulated voice.

Dr. Carnat quoted some authorities as giving susceptibility to induction of hypnosis as being 78 per cent, others as high as 95 per cent. He stated persons of high intelligence made the best subjects and that the age group 7-14 years is the most responsive and over 60 age group least responsive.

He felt that possibly there was a place for hypnosis in dentistry as an anaesthetic reagent for a certain type of patient in certain types of practices.

The interest stimulated was well demonstrated by the number of questions asked the speaker by members of the audience.

The thanks of the Society were conveyed to Dr. Carnat by Dr. George Findlay.

In the business meeting following the address, Dr. Jim Zimmerman, as Alberta member to the Board of Governors of the C.D.A., described why the convention is being brought West for the sake of national solidarity despite a financial loss incurred in so doing. He called for wholehearted support of the Convention in Banff by all members of the Alberta Dental Association and members of the Calgary Society in particular.

Dr. Baden Powell, chairman of the C.D.A.-A.D.A. convention, gave a brief report on convention plans to date.

Alberta Dental Health Week opened in Calgary with a dinner meeting at the Palliser Hotel, Monday, February 26, 1956. President Dr. W. Ross Upton was chairman.

The guest speaker Dr. W. Scott Hamilton, Dean of the Faculty of Dentistry, University of Alberta was introduced to the meeting by the president of the Canadian Dental Association, Dr. R. R. McIntyre.

Dean Hamilton spoke on the subject "The Problems of Dental Education." Before commencing the body of his address he stressed that it is the duty of the profession to state the case for fluoridation but not to get into controversy either with the public or those opposed to fluoridation who have the right to state their piece. In his address Dr. Hamilton covered the many facets of Dental Education including the relationship of the National Examining Board to the U. of Alberta, the accrediting of Schools, entrance requirements and the selection of possible candidates. He stated that it was his feeling that a year of hospital internship beyond graduation was essential if dentists were to be able to truly make oral diagnosis with authority.

In speaking of Alumni support, Dean Hamilton quoted the expression "The strength of a school is dependent upon its alumni support," and said that it is almost non-existent at Alberta, Faculty of Dentistry.

Dr. Hamilton explained how bequests could be made to a University in substantial sums without lessening a net estate value after taxes. Funds for prizes, scholarship fund contributions, the crowded training facilities—all important features in Dental Education were also described and elaborated upon by Dr. Hamilton in his carefully prepared address. Dr. Paul Luxford expressed the appreciation of the meeting to Dean Hamilton. In the business session that preceded the guest speaker, Dr. Baden Powell reported on the forthcoming Convention of the C.D.A. and Alberta Dental Association. He stated that there were 140 prepaid registrations to date and that about 300 were expected in total registration.

Dr. W. A. Nixon reported to the meeting on the coverage for Alberta Dental Health week through the press, TV, radio, the distribution of posters and literature. Speakers at school classes and Home and School Association meetings. Mrs. George Street, Hygienist would speak to primary school classes in Calgary and Red Deer.

Other guests of the Society for the evening included representatives from educational bodies of the city:

Dr. Andrew Doucette, Director of the Calgary Branch of the University of Al-

berta; Mr. G. Foster, Principal of Central High School, and Mr. H. D. Cartwright, Principal of Crescent Heights High School.

The meeting was adjourned.

Dr. A. R. S. Gray of Lethbridge was elected to the Board of Directors of the **Alberta Dental Association** at a meeting held in Edmonton.

During the meeting Dr. E. R. Upton of Calgary assumed the responsibilities of president succeeding Dr. A. C. Ahrens of Lethbridge.

Dr. P. H. Kendall of Edmonton was named president-elect to succeed Dr. Upton in 1957.

Other members elected to the Board of Directors were: Dr. Lorne Brooks of Calgary and Dr. M. Warmonuk of Fairview.

New Brunswick

Dr. Ernest D. Halford was re-elected president of the **Saint John Dental Society** at the regular monthly meeting of the group held in the Admiral Beatty Hotel recently.

Other officers elected were: vice-president, Dr. G. L. Ramsay; treasurer, Dr. John G. Blackmer; and secretary, Dr. Arthur Steuermann.

During the business sessions plans were completed for the annual "get-together" of members of the organization and their wives to be held some time in May at the Admiral Beatty Hotel.

British Columbia

The **B. C. Dental Association** has set up a new committee on "Dental Economics", whose duty it will be to study the economic structure of the dental profession in British Columbia. At the May convention the constitution will be amended to make this one of the "standing committees" of the Association.

It is five years since B.C. dentists participated in the compilation of a fee schedule, which is now completely out of date as operating costs have mounted and the value of the dollar has depreciated. A new survey is being carried out at the present time, and the committee will maintain surveillance over the adequacy of dental fees in future years.

Kamloops was the locale of the spring meeting of the **Interior Dental Society** on March 24 with dentists from all the interior towns in attendance.

The morning session was conducted by Mr. G. H. Tobey of the L. D. Caulk Company. Normally there is not much opportunity of talking to representatives of the manufacturing companies, so a great deal of information was acquired, and in the "mixing session" held for dental assistants, instruction was given in handling materials properly.

In the afternoon the clinician was Dr. Harold Helm of Vancouver, who covered many phases of paedodontics. He stressed the use of the rubber dam in children's work and devoted quite a lot of time to the use of stainless steel crowns.

The day was concluded with liquid refreshments (by courtesy of the L. D. Caulk Company) and a steak dinner.

Twenty-five past-presidents of the **Vancouver and District Dental Society**, seated at a flower-decked table of honor in the centre of the Banquet Room of the Hotel Vancouver, were given special recognition at the final meeting on May 1. The retiring President, Dr. L. W. Beamish, extolled their work through the years in guiding the society to the unique position it holds today.

The monthly meetings have been extremely interesting and well attended. Out of 398 dentists practising in the area, there are 303 members in good standing. Two new study clubs, one in Periodontics whose instructor is Dr. J. W. Neilson of Seattle, the other in Occlusal Equilibration under Dr. Wm. Scott of Vancouver, have increased the number of active study clubs to 10 with a total membership of 128.

During the business session, when annual reports were read and approved, the election of new officers took place, with the result that these men will assume responsibility during the next season:

President: Dr. W. P. Munsie.

President-Elect: Dr. J. G. Ryan.

Secretary-Treasurer: Dr. C. W. Gardner.

Directors: Drs. J. M. McDougall, R. K. Lindsay, O. F. Wright and J. C. Lewis.

Dr. Gordon Shrum, Head of the Physics Department at U.B.C., and a member of the National Research Council of Canada, was the inspiring (and humorous) post-prandial speaker. His topic "Science in our Times" dealt with the need today for scientifically trained personnel to cope with the expanding needs of an increasing world population.

D.H.M.

Quebec

The annual business meeting of the **Mount Royal Dental Society** was held on Tuesday,

April 17, 1956, at the Mount Royal Hotel, chaired by the President Dr. S. Silver. Executive officers for the year 1956-57 were elected as follows:

President Dr. M. Lang
 Vice-President Dr. A. Bazerman
 Secretary Dr. D. Soloman
 Treasurer Dr. D. Steinberg
 Historian-Archivist .. Dr. M. H. Toker

Members of the Executive

Dr. I. Druckman Dr. I. M. Pesner
 Dr. A. C. Mendel Dr. C. M. Baer
 Dr. R. H. Rosen Dr. M. Lapedis
 Dr. I. Lubin

The meeting then discussed a proposed group life insurance plan which is patterned along the lines of the existing group health and accident plan, now in force.

The monthly meeting of the **Montreal Dental Club** was held in the Queens Hotel, Monday, April 9, 1956.

Dr. W. R. Scott of Vancouver was the guest speaker, his topic "Occlusal Correction". At an afternoon session Dr. Scott presented a clinical case, and the evening was devoted to the theoretical approach to the subject.

In occlusal correction, selective tooth grinding is obviously necessary, and must often be supplemented by some mouth reconstruction, bridges, inlays, etc.

In discussing the reasons necessitating occlusal correction Dr. Scott described the forces acting upon the teeth and periodontal fibres. When these are excessive or directed in some other manner than along the long axis of the teeth, a periodontal breakdown develops. An intermittent stimulation, such as developed during mastication, is a stimulus, but a constant force is damaging. This brought up a pet theory of Dr. Scott's, that of stress, leading to clenching and bruxism. Since it is difficult to cure the stress factor, although it can be minimized, we must cure and distribute the forces in the mouth.

In his discussion of the grinding technique, Dr. Scott felt that although the established formula of first grinding in centric; buccal of uppers and lingual of lowers, etc. was a standard easy to follow, he feels that before grinding the patient is asked to go through the excursions, hence developing a guide as to where to begin grinding. By this method, he feels that much less

tooth structure need be destroyed in many cases.

Dr. Scott illustrated his lecture with models and slides.

D.J.M.

Ontario

The last regular monthly meeting of the 1955-56 season of the **Hamilton Dental Association** was held recently at Fischer's Hotel. Elections were held and annual reports read. Dr. W. H. Feasby, secretary, reviewed the business of the executive, and Dr. P. T. Smylski read the treasurer's report.

The election returned the new executive as follows: President, Dr. Foster Kilgour; vice-president, Dr. W. H. Feasby; secretary, Dr. P. T. Smylski; treasurer, Dr. Ross Finlayson; directors, Dr. W. Baxter and Dr. A. Quick. The appointment of Dr. S. Rosen as program chairman was announced. Dr. George Morrow turned the president's gavel over to Dr. Kilgour and Dr. W. Hambly made a presentation to the retiring president.

The program for the evening consisted of informal talks by Dr. Ashley W. Lindsay, editor of the Journal of the Ontario Dental Association; Dr. Wesley J. Dunn, editor of the Journal of the Canadian Dental Association and associate secretary of the provincial licensing board and Dr. Roy Ellis, dean of the Faculty of Dentistry of the University of Toronto, who hoped that a new dental building would be built at the University of Toronto by the fall of 1959.

The **Kingston and District Dental Society** held its April dinner meeting in Morrison's Lounge. Dr. John D. Lyon, the president, was in the chair for the meeting and introduced the speaker of the evening, Mr. Malcolm of the Victoria and Grey Trust Company. Estate planning was discussed, including the subject of wills and the problems involved with succession duties. After his presentation, discussion brought forth further points relating to the address. The speaker was thanked by Dr. Frank Sorensen.

The March meeting of the society was held at the same place; Dr. J. Kreutzer, professor of Preventive Dentistry at the University of Toronto, spoke on Nutrition and the Tooth.

Dr. Murray Robb of Toronto was the guest speaker at the regular meeting of the **Lambton County Dental Society** recently.

The meeting was held at the Sarnia Golf Club and the subject of Dr. Robb's address

was "The Role of Antiformin in Periodontia." He explained that antiformin, a combination of drugs, was one of the modern techniques in preventive dentistry.

Dr. L. B. Brunton was chairman for the meeting. Dr. E. A. Storey introduced the speaker and Dr. William McLean thanked him.

Dr. Russell Woods of Watford, a past-president of the Ontario Dental Association, was among the out-of-town guests. Others were present from Forest and Petrolia.

At the annual meeting of the **Niagara Peninsula Dental Association** held at Welland on March 23rd, Dr. Roy A. Tranter, of Niagara-on-the-Lake, was elected president.

Other officers were named as follows: Vice-President, Dr. J. Simms, St. Catharines; Secretary, Dr. R. Goodine, St. Catharines; Treasurer, Dr. C. M. Smelsky, of Welland; Directors, Dr. C. Wray, of Beamsville; Dr. D. Copeland, of Grimsby and Dr. B. W. Herod, Niagara Falls, Ont.

The inaugural meeting of the **Kenora Rainy River Dental Society** was recently held in the Kenricia Hotel, Kenora, Ontario.

Ten dentists from Fort Frances, Dryden, Sioux Lookout, and Kenora attended along with Dr. H. Bateman of Toronto, President of the Ontario Dental Association, to hear Dr. J. Purves, of Toronto, a clinician who lectured under the auspices of the Royal College of Dental Surgeons of Ontario and the Faculty of Dentistry of the University of Toronto.

Officers elected were: President, Dr. E. C. Apps of Kenora; Sec.-Treasurer, Dr. J. Litman of Kenora; President-Elect for 1957, Dr. C. F. Garland, of Fort Frances.

The next meeting is planned for the autumn, in Kenora, when another clinician will speak.

J. L.

Saskatchewan

The **Saskatoon Dental Society** was privileged to have as their guest speaker Dr. V. Morton, an anesthetist in the city. She spoke on the subject of Modern Anaesthesia.

Dr. Morton briefly referred to the indications, the care to be exercised and the precautions to be considered, in the field of General Anesthesia. Then at some length she spoke about the uses of Ether, Nitrous Oxide, Trichloride Ethylene and Pentothol in conjunction with Nitrous Oxide and Tri-

chloride Ethylene. She indicated the advantages and disadvantages of the use of the endotracheal tube, which provides a perfectly clear airway. Dr. Morton spoke about some of the problems encountered in jaw fracture cases.

The address of Dr. Morton was very capably presented and was one of vital interest to the large number in attendance.

L. D. H.

Manitoba

The **Winnipeg Dental Society** held its final meeting for the 1955-56 term on Monday, April 9th at the Royal Alexander Hotel. This meeting was the annual "Home Talent" meeting with various members of the society taking part in the clinical presentation. The program was as follows:

1—Dr. I. Walsh, spoke on various aspects of Endodontics. He outlined the different techniques he had found most satisfactory and concluded that in most cases conservative treatment was adequate without resorting to surgery. He also conducted a slide quiz showing how difficult it is to definitely differentiate between egots and granulomas using the ordinary radiograph.

2—Dr. J. Snidal, gave a talk on the theme of trying to improve the relationship between the dentist and the laboratories. Manitoba has been having considerable trouble with the "bootleg laboratories" for the past few years and Dr. Snidal, who worked in a commercial lab before taking his dental course, outlined some ways that the dentist could co-operate with, and encourage the technicians who were working legally. This talk provoked a good deal of interesting discussion from the assembled members.

3—A panel consisting of Dr. W. McKenzie, Dr. G. Elsey, and Dr. B. Oja with Dr. P. Beattie as moderator answered questions on some of the nontechnical practice problems. Several aspects were covered such as dental salesmen, emergency treatments, reline fees, the crowded appointment books, etc. These men having been in practice for many years gave many helpful hints on these problems.

4—Mr. W. Dunlop, a representative from a local investment company gave an outline of what he felt would be an adequate investment program for a dentist. He spoke of insurance, annuities, and bonds, and the different types of stocks. He explained the part each played in an overall program and gave reasons for possibly investing in one stock rather than another.

5—Mr. J. M. Robinson of one of the local trust companies spoke on estate planning. He spoke on the proper way to have a will

made out, and the necessity of revising these from time to time. He also discussed succession duties, gift taxes, etc., and the necessity of taking all into consideration when a person was planning the future for his family. This talk provoked many questions from the floor as it brought out points that many of us didn't know about, or had just ignored.

6—A panel of three of the younger members of the society, Dr. G. Danzinger, Dr. R. Wallace, and Dr. A. Bourgois, discussed the treatment of anterior teeth. This covered all the different types of cavity preparations and the various kinds of filling materials that they had used. As everybody seems to handle these cases in slightly different ways it was interesting to hear of the techniques these men had found best suited to their needs.

7—An open discussion period was held at the end of the day's program in order to

give any member of the society a chance to discuss any subject he chose.

The annual business meeting of the Winnipeg Society was held at the luncheon interval. There was a good attendance at this, with over 65 members taking part. The main resolutions discussed and passed were:

Election of the executive for the coming year.

Dr. Z. Kasloff, past president; Dr. G. Campbell, president; Dr. W. Grenkow, vice-president; Dr. M. Averback, clinic chairman; Dr. P. Beattie, secretary-treasurer; Dr. G. Merkeley, Dr. G. Danzinger, committee members.

Election of three life members of the society: Dr. Olive Cole, Dr. Evert White, Dr. E. J. Robb.

Increase in the annual dues to \$15 to cover increased clinical and secretarial expense.

British Commonwealth News

Our readers will be interested to learn that the Dental Council of the Royal College of Surgeons of Edinburgh extended a unanimous invitation to **Dr. J. Menzies Campbell, F.R.S.E.**, to give an Oration on John Smith on Thursday, May 31st in the Hall of the College. This is to mark the

centenary on June 2 of his inaugural lecture of the **first** comprehensive course on **Physiology and Diseases of the Teeth** to be delivered in Scotland. John Smith (1825-1910), M.D., F.R.C.S., LL.D., F.R.S.E. was one of the most outstanding pioneers in British dental education.

A study of 283 cases of vital pulpotomy using calcium hydroxide has been reported with a success of 49 per cent according to clinical and roentgenographic standards. The percentage of failure in primary molars was greater in the mandibular arch than the maxillary. Further clinical studies are needed to enlarge our understanding of the clinical effectiveness of vital pulp therapy.

David B. Law, D.D.S., M.S.
Journal of Dentistry for Children, First Quarter 1956.



General A. M. Gruenther, Supreme Commander Allied Powers Europe is shown inspecting one of the mobile clinics of No. 1 Field Dental Unit in Germany. With him is Major C. E. Purdy.

The Corps

Majors H. W. Hart and G. C. Evans presented clinics at the recent Ontario Dental Association meeting, on partial denture design and anterior tooth rehabilitation, respectively.

Brig. E. M. Wansbrough has left for Europe to inspect No. 1 Field Dental Unit in Germany and No. 35 Field Dental Unit in France. He will inspect HMCS Bonaventure in Belfast and will also attend the 44th Annual Meeting of the Federation Dentaire Internationale held in Zurich, Switzerland at which he will represent The Canadian Dental Association.

Lt.-Col. A. C. Leman, CO of No. 35 Field Dental Unit, presented a paper at the F.D.I. meeting entitled "The Task of the Dental Officer in War Time."

Colonel C. B. H. Climo was delegated to represent the Dept. of National Defence at the Banff meeting of the Board of Governors of the Canadian Dental Association held in June.

No. 12 Coy. R.C.D.C. had the honor of winning the Halifax Garrison Curling Club Championship for 1956. The team was coached by Lt.-Col. H. L. Harris and comprised Capt. R. B. Ross, S/Sgt. R. F. Gardner, L/Cpl. G. D. Jollimore, and Pte. R. J. McDonald.

It was a surprise to Majors Protheroe and Butler when they met in Japan at receptions on board HMCS Ontario and at the Canadian Ambassador's residence. Major Butler is stationed in Korea; Major Protheroe was dental officer on board HMCS Ontario.

Brig. Wansbrough represented R.C.D.C. at a dinner given by the Faculty of Dentistry, University of Toronto, in honor of Mr. C. C. Rous upon the latter's retirement as secretary of that faculty. Mr. Rous served in the Corps during the Second World War as senior procurement officer in the rank of Lieutenant-colonel.

Advice has been received of the appointment of Major H. J. Chartrand as Second in Command of No. 54 Dental Unit CA (M).

Major Chartrand served in the Infantry Reinforcement Stream during World War II, later transferring to the Royal Canadian Dental Corps. On demobilization in 1946, he entered the Faculty of Dentistry, University of Toronto, where he enrolled in the COTC. In 1948 he joined the Regular Army.

On graduation from the University of Toronto in 1949, he was attached to No. 12 Company, Royal Canadian Dental Corps, Eastern Command. In 1951, he was posted to 27 Canadian Infantry Brigade in Germany, returning to Ottawa in 1953. On his release from the Regular Force, he re-enlisted in No. 51 Dental Unit, Canadian Army Militia.

Prior to his appointment as 2 i/c of the Unit he was attached to 113 Manning Depot, where he was in charge of the Dental Wing.



MAJOR H. J. CHARTRAND

In Memoriam

George Levor Kroshus — Dr. George Levor Kroshus of Assiniboia passed away on May 4, 1956 at the age of 64 years.

Born in Caledonia, Minn., he graduated in dentistry from Northwestern University in 1914 and came to Assiniboia the same year to establish his practice.

Dr. Kroshus was a member of St. John's Lodge AF and AM at Assiniboia and of the Wa Wa Shrine Temple in Regina.

He was active in musical activities in Assiniboia, owned the first electric organ in Southern Saskatchewan and was a President of the Assiniboia Musical Festival Association.

Dr. Kroshus was the first leader of the town band organized here in 1914. He played in the band until 1935.

He was a warm supporter of light horse shows and raised collie dogs for many years.

He is survived by his wife, two daughters, Mrs. Pat Grant and Marilyn, and a son, Dr. Donald Kroshus, of Moose Jaw. Dr. Kroshus was predeceased by two sons, Perry, in 1919, and Laughlin, in 1929.

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Deans Elliott Taylor — Dr. Deans Elliott Taylor, of Tillsonburg, Ontario, passed away on March 28, 1956 at the age of 66 years.

Born in Port Dover, Ontario, Dr. Taylor graduated from the Royal College of Dental Surgeons of Ontario in 1911. Dr. Taylor practised in Tillsonburg until his retirement in 1952.

He was a past-president of the Tillsonburg Chamber of Commerce, of the Tillsonburg Golf and Country Club. He was vice-president and director of The Tobacco Marketing Board in 1940 and was a member of the Masonic Order and Oddfellow's Lodge. He was a former chairman of the Board of Education for Tillsonburg.

Dr. Taylor was an ardent hunter and fisherman and a dog fancier who bred and showed beagle hounds. He was president of the Grand River Beagle Club at the time of his death.

Dr. Taylor is survived by his wife, Hanna and his daughter, Mrs. K. E. Pilkington.

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Stephen Murton Kennedy — Dr. Stephen Murton Kennedy of London, Ontario, passed

away on May 9, 1956 at the age of 80 years.

Born in London Township, the son of the late Rev. and Mrs. James Kennedy, Dr. Kennedy graduated from the Royal College of Dental Surgeons of Ontario in 1900.

He began his practice in Leamington, where he also served for a period as chairman of the public school board, and then moved to London in 1907 where he continued his practice until his retirement in 1951 after 51 years of service.

During his career he received many honors. For 13 years he was a member of the board of directors, Royal College of Dental Surgeons of Ontario, of which he was president for two years, and later became an honorary life member.

He was a past president of the London Dental Society and an honorary member of the Ontario Dental Association. He also helped to organize the dental clinic at Victoria Hospital.

Dr. Kennedy was a member of Metropolitan United Church, where he was clerk of session for many years and a member of the board of stewards.

He was past master of Tuscan Lodge, No. 195, AF and AM, a member of the Scottish Rite, charter member of both the London Rotary Club and the Highland Golf Club.

His wife, the former Susan Margaret Richardson, survives with one daughter, Mrs. W. E. McIlroy, and two sons, J. F. M. Kennedy, D.D.S., M.D., and Frank S. Kennedy, M.D., of London, Ontario.

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Leslie Ochart Fuller — Dr. Leslie Ochart Fuller of Edmonton, Alberta, passed away on March 31, 1956, at the age of 79 years.

A native of Truro, N.S., he came to Edmonton in 1903 from Philadelphia where he received his dental training.

He practised in Edmonton for many years and later practised in Mayerthorpe, Alberta; Goldfields, Sask., and Yellowknife. He was instrumental in setting up the dentistry department at the University of Alberta and was its first dean.

Surviving are his widow, a son Donald of Edmonton and two daughters, Miss Gwen Fuller of New Westminster, B.C. and Mrs. M. Slemon of Calgary.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1956	Banff, Alberta	June 3rd—6th
1957	Winnipeg, Manitoba	June 23rd—26th
1958	Montreal, Quebec	Oct. 5th—8th

FUTURE EVENTS

Date	Function	Location	Officer	Address
Aug. 30- Sept. 1	Saskatchewan Dental Assoc. Convention	Waskesiu	Dr. G. H. Janzen	11 Knox Block, Prince Albert, Sask.
Oct. 17, 18 & 19	Montreal Dental Club Annual Fall Clinic	Montreal	Dr. Bruce Ward	1414 Drummond St., Montreal, P.Q.
Oct. 22	Academy of Dentistry Dinner	Toronto	Dr. W. W. Macdonald	Pauline Ave., Toronto, Ont.
Nov. 22	Academy of Dentistry Annual Winter Clinic	Toronto	Dr. W. W. Macdonald	Pauline Ave., Toronto, Ont.
Dec. 3-7	Greater New York Dental Meeting	New York	Dr. R. E. Morse	Room 106A, Hotel Statler, New York, N.Y.
Sept. 7-14 1957	Congrès de la Fédération Dentaire Internationale	Rome, Italy	G. H. Leatherman	Secretary, London, England

SHORT GRADUATE COURSES

Tufts School of Dental Medicine announces the following courses:

- Occluso-Rehabilitation I—Lecture and Seminar Course
Sept. 21 through Sept. 26, 1956.
- Occluso-Rehabilitation II—Special Participation Course
Seven months beginning October 5, 1956.
- A Participation Course in Periodontics
Ten Mondays beginning Oct. 8, 1956.
- Participation Course in Periodontology
Oct. 8 through Oct. 12, 1956.
- Participation Course in Periodontology
April 8 through April 12, 1957.

For further information contact: Dr. Irving Glickman, Director, Division of Post-Graduate Studies, 136 Harrison Ave., Boston, Mass.

New York University announces the following courses:

Sept. 17/56—May 23/57	Periodontia and Oral Medicine
Sept./56 —May/58—full time	Periodontia and Oral Medicine
Sept./56 —May/58—half time	Periodontia and Oral Medicine
Sept./56 —May/60	Periodontia and Oral Medicine

These courses are designed for comprehensive preparation in Periodontia and Oral Medicine and are of particular significance for certification towards specialization.

Feb. 27/57—May 8/57	Refresher course in Periodontia and Oral Medicine
Apr./57 —four weeks	Periodontia and Oral Medicine in the Spanish Language

For further information: Secretary, Postgraduate Division, New York University, College of Dentistry, 209 East 23rd Street, New York 10, N.Y.

The American Institute of Dental Medicine continues to offer Case Histories from the broad field of Dental Medicine. These will include original 35 mm. Kodachrome slides of the oral condition, pertinent laboratory findings, medical background, roentgenograms, histologic slides, etc. For further information contact: Mrs. C. Novembri, 2240 Channing Way, Berkeley 4, Cal.

Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

Le problème de l'épithélisation des polypes pulpaire. Une nouvelle vérification de la prolifération transpulpaire des débris épithéliaux de Malassez*

par MAURICE BOUYSSOU, M.D., Méd.-Stom., Toulouse, France.

La présence d'un revêtement épithélial sur certains polypes pulpaire (pulpites prolifératives chroniques) est une constatation aujourd'hui classique.

Cet épithélium se rencontre sur un pourcentage variable de ces lésions, tant sur des dents temporaires que sur des dents permanentes.

H. G. RADDEN, qui en a fait en 1939 un début de statistique, a relevé sur 98 cas, 23 polypes couverts d'épithélium contre 75 sans épithélium. JANSKY (1950), sur 112 polypes, n'en trouve que 14 épithélisés, contre 98 non épithélisés. Par contre, l'étude de HILDE FREY (1948) sur les polypes de dents temporaires, indique que sur 18 cas, 17 polypes étaient recouverts d'épithélium et un seul n'en présentait pas. Cet auteur ajoute que l'on peut rencontrer dans la même bouche des polypes

aux caractéristiques histologiques différentes: c'était notamment le cas pour les polypes de deux incisives centrales temporaires, dont l'un était pourvu et l'autre dépourvu d'épithélium.

Ces caractères et ces pourcentages ne sont rappelés ici que pour le cas où ils présenteraient quelque intérêt dans la discussion de ce problème. Les figures 1 et 2 montrent des exemples de polypes non-épithélisés (plus fréquents sur les dents permanentes), et de polypes épithélisés (plus fréquents sur les dents temporaires).

La question de l'origine de ces revêtements épithéliaux est un des problèmes les plus difficiles qu'ait connu la pathologie bucco-dentaire. On en jugera non seulement par la complexité des recherches expérimentales qu'elle a suscitées, mais aussi par la portée biologique des hypothèses qu'elle a fait soulever, telle que celle d'une métaplasie méso-

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dermo-ectodermique (?), qui mettait en cause le dogme même de la spécificité des feuilletts embryonnaires. . . On trouvera sur la figure 3, schématisées, les quatre hypothèses qui ont été envisagées pour tenter de trouver une solution.

Nous ne saurions mieux exposer les données du problème qu'en nous inspirant du plan très clair établi en 1939 par le Professeur H. G. RADDEN, de Manchester, que nous remercions pour la documentation qu'il nous a obligeamment communiquée. Avant d'entreprendre ses recherches, il avait analysé les diverses provenances possibles de l'épithélium, qu'il divisait en "sources" externes et internes.

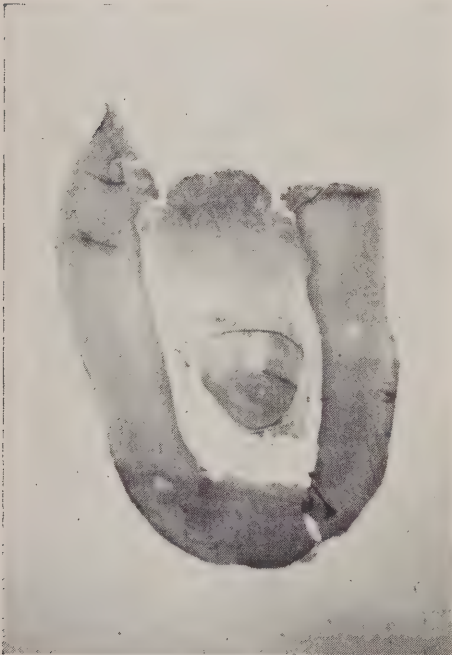


FIG. 1. Polype pulpaire non épithélisé: type plus fréquent sur les dents permanentes (x6).

A. Les possibilités d'une provenance externe de l'épithélium.

L'hypothèse d'une provenance externe implique que l'origine de l'épithélium se trouve à l'extérieur de la pulpe hyperplasiée, et ne peut donc être que du tissu épithélial situé dans la cavité buccale.

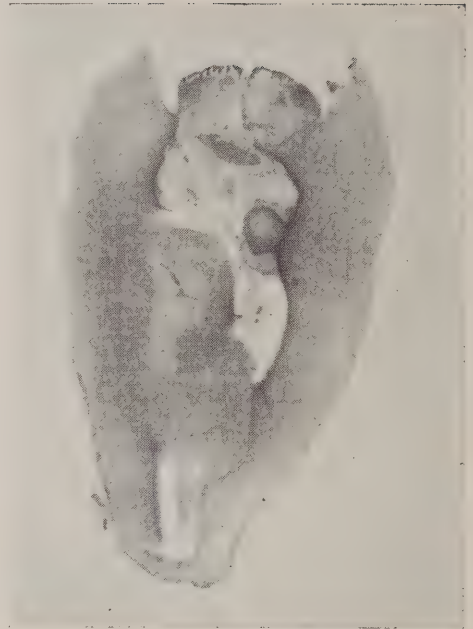


FIG. 2. Polype pulpaire épithélisé: type plus fréquent sur les dents temporaires (x6).

A cet égard, deux cas peuvent se présenter:

1) Dans un premier cas, le tissu du polype pulpaire se trouve (ou s'est trouvé) *en contact* avec l'épithélium buccal ou mieux gingival.

Ce cas est classiquement considéré comme fréquent, et dû à la prolifération inflammatoire de la papille gingivale voisine qui fournit un revêtement épithélial au polype par extension directe dès que cette continuité peut s'établir (fig. 3).

Le fait est réel, comme l'ont prouvé diverses observations et constatations histologiques (RADDEN), notamment lorsqu'il y a coexistence d'un polype gingival et d'un polype pulpaire. Tous les auteurs sont d'accord à ce sujet. Mais cette continuité ne paraît pouvoir s'établir que si la cavité et son polype se trouvent au niveau et au contact de la gencive, ce qui est loin d'être le cas pour la grande majorité des polypes.

2) Dans un deuxième cas, de très loin le plus fréquent, le polype se trouve *éloigné*

de la gencive, et notamment *séparé* d'elle de toutes parts par les tissus durs de la dent.

Il faudrait dès lors admettre que l'épithélisation du polype s'est faite par transplantation à distance de cellules épithéliales venues de la bouche (fig. 3).

Cette opinion est partagée par plusieurs auteurs: EULER, KRANZ, KRONFELD et BOYLE, STONES, HILDE FREY, MEYER, etc., pour qui le processus serait celui d'une greffe libre, spontanée, de fragments d'épithélium buccal ou même de cellules épithéliales isolées, desquamées, et venues au contact de la surface du polype (Kontakt transplantation de KRANZ).

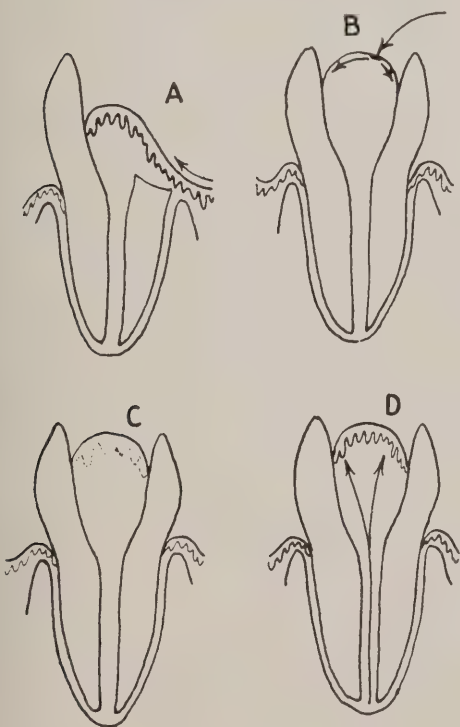


FIG. 3. Les quatre provenances hypothétiques de l'épithélium:

A. Par contact direct et prolongé avec l'épithélium gingival.

B. Par transplantation à distance d'éléments épithéliaux libres venus de la muqueuse buccale (?).

C. Par métaplasie mésodermo-ectodermique (?).

D. Par prolifération transpulpaire d'éléments épithéliaux profonds (débris de Malassez intra- ou para-dentaires).

Ce mécanisme d'un greffe spontanée, affirmé par de hautes autorités, vaut d'être analysé en détail. En effet, bien qu'elle soit très répandue, ce n'est là qu'une opinion, et aucune preuve de cette affirmation n'a jamais été avancée, mise à part une seule greffe expérimentale réussie (sur un total de 8) par H. G. RADDEN en 1939:

Huit premières molaires permanentes, contenant de gros polypes pulpaire furent utilisées. Ces polypes étaient de teinte bleu-violet et gorgés de sang, donc non épithélisés. 3 spécimens furent opérés sous anesthésie locale (procaine 2%), les 5 autres sans anesthésie.

Des morceaux d'épithélium larges de 3 x 1 mm. furent "pelés" au scalpel sur la muqueuse gingivale, piqués sur une aiguille hypodermique et implantés dans une incision de 3 à 5 mm. de profondeur pratiquée dans les polypes. Les bords de l'incision furent comprimés jusqu'à cessation de l'hémorragie et l'aiguille retirée.

Sur les 8 polypes traités, un seul spécimen, opéré sous anesthésie, montra une greffe réussie (la dent ayant été extraite au 5ème jour). L'aspect histologique de l'implant était assez particulier. Les cellules épithéliales situées au centre présentaient en effet des signes nets de dégénérescence. Par contre, les cellules épithéliales les plus périphériques, en contact avec le tissu conjonctif du polype, montraient tous les signes d'activité d'un stratum germinatif, même celles qui, sur la surface gingivale originelle, s'étaient déjà transformées en squames prêtes à la desquamation. Le tissu conjonctif contigu montrait des papilles vivantes et bien vascularisées.

Les commentaires de l'auteur, dont on ne peut qu'admirer la méthode et l'habileté technique, montraient qu'un ensemble de conditions optimales, à peu près irréalisables spontanément, sont nécessaires au succès d'une telle transplantation épithéliale: nécessité d'un implant relativement grand de tissu (qui serait détaché par la mastication?) et non de cellules épithéliales isolées, car on n'a jamais pu en greffer;—absence d'altérations importantes pendant le séjour de l'implant détaché en liberté dans la bouche; — nécessité d'une implantation très profonde dans le polype par la mastication, puis d'une rétention de l'implant dans cette brèche traumatique, puis de sa protection contre l'infection et les traumatismes subséquents.

H. G. RADDEN concluait lui-même que les conditions chirurgicales de son expé-

rience ne permettaient aucune déduction relative à ce qui peut se passer "au naturel" dans la bouche. Même profonde, retenons que l'implantation n'avait abouti qu'une seule fois sur huit cas opérés.

D'autres tentatives de greffe ont d'ailleurs été faites, qui n'ont jamais abouti: JANSKY a opéré plus de 20 polypes non épithélisés, en excisant la couche superficielle et la revêtant immédiatement d'un fragment d'épithélium gingival, recouvert lui-même de gaze stérile, puis traité par sulfamides, pénicilline, etc.

Malgré cela, aucune de ces tentatives n'a réussi, pas un seul polype ne s'est couvert d'épithélium, le transplant ayant toujours "flotté" sur la couche nécrotique du polype ou adhéré seulement au pansement.

Un des obstacles majeurs à ce qu'il faudrait appeler une "greffe de Thiersch spontanée" est la nature même de la couche superficielle du polype. C'est un exsudat inflammatoire formé par un épais feutrage fibrineux infiltré d'innombrables polynucléaires dont certains sont dégénérés (fig. 4). Il faut bien admettre que c'est là un milieu singulièrement défavorable pour la prise d'un greffon épithélial libre! H. G. RADDEN le dit lui-même très objectivement. Cette objection à la théorie des implants spontanés a d'ailleurs été relevée par d'autres auteurs (HILDE FREY, JARMER, JANSKY).

Nous devons conclure que l'implantation spontanée de cellules ou de tissu épithélial sur ces polypes est théoriquement pensable mais reste *pratiquement irréalisable*, car elle supposerait un concours de circonstances si extraordinaire qu'on ne peut les imaginer (à plus forte raison quand on considère la fréquence des polypes recouverts d'épithélium).

Si nous avons insisté sur cet aspect du problème c'est pour contribuer à faire disparaître une notion aussi répandue qu'erronée.

B. Les possibilités d'une provenance interne de l'épithélium.

Par provenance interne de l'épithélium, il faut entendre que ce dernier provient de

l'intérieur de la dent, par l'intermédiaire des tissus pulpaire eux-mêmes.



FIG. 4. Polype pulpaire non épithélisé. Exsudat fibrineux et polynucléaires plus ou moins dégénérés dans la couche superficielle. Zone sus-jacente infiltrée de cellules inflammatoires (polynucléaires, lympho- et plasmocytes). Multiples néo-capillaires dans le pédicule. (x60).

1) Une première explication, qui ne résiste pas à la critique, est l'hypothèse d'une métaplasie mésodermo-ectodermique, par laquelle le tissu conjonctif du polype pourrait se transformer superficiellement en épithélium (fig. 3). Une telle métaplasie n'est pas possible. On sait en effet que les feuilletts embryonnaires gardent une spécificité propre, qui détermine et limite strictement leurs potentialités: un tissu conjonctif (d'origine mésodermique) ne peut pas devenir, même partiellement, de l'épithélium de type buccal, tissu d'origine ectodermique très différencié (fig. 5).

2) Reste une dernière explication: l'épithélium recouvrant le polype proviendrait d'éléments épithéliaux venus de la profondeur des tissus pulpaire (fig. 3).

Cette dernière hypothèse qui avait déjà été envisagée dans le passé soulève deux questions:

a) *Existe-t-il des éléments épithéliaux dans les tissus pulpaire, tout comme il en existe dans la membrane périodontale (ligament alvéolo-dentaire)?*

Des réponses positives à cette première question ont été fournies depuis longtemps.

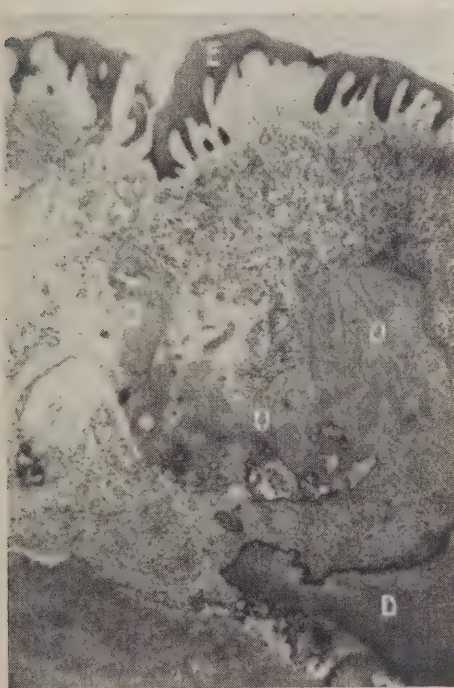


FIG. 5. Polype pulpaire épithélisé arrivé à maturation. Epithélium pavimenteux stratifié "adulte" de type gingival. Plaques osseuses néoformées au centre de la masse. (x60).

En 1926 et 1929, ORBAN a démontré sans conteste l'existence dans la pulpe radiculaire de restes épithéliaux analogues aux débris épithéliaux que MALASSEZ avait décrits le premier en 1884 dans le ligament alvéolo-dentaire.

Ce sont en effet des reliquats de la gaine de Hertwig qui se sont trouvés inclus dans le tissu pulpaire, par suite d'une perturbation locale au cours du développement. Ils ont tous les caractères définis par MALASSEZ, et en particulier cet

aspect "en livrée de misère", c'est-à-dire plus ou moins dégénérés, avec des noyaux chromophiles, mais avec un cytoplasme granuleux très réduit.

ORBAN les décrit dans la pulpe comme associés à la formation des denticles vrais (formés de dentine), fréquemment rencontrés près des foramens apicaux et qui ne peuvent s'édifier que par la présence d'épithélium adamantin induisant localement la différenciation d'odontoblastes et de dentine.

D'autre part, en 1929, HEINDL, de Prague, a démontré aussi que la couche interne de la gaine de Hertwig peut s'invaginer jusque dans la pulpe au cours de la formation de la racine. Elle peut y provoquer la différenciation de denticles ou y subsister au repos sous forme de débris épithéliaux intrapulpaires. NEUWIRT a montré de son côté que de telles invaginations épithéliales pouvaient produire dans la pulpe de véritables odontomes inclus.

La genèse de ces îlots épithéliaux dysontogénétiques intrapulpaires a fait l'objet d'une étude approfondie de K. JARMER en 1951. S'appuyant sur des exemples concrets empruntés à FRIDRICHOWSKY et à ORBAN, il montre que le repli de la gaine épithéliale interne qui s'invagine dans la papille pulpaire peut:

- soit rester continu et donner un denticle unique pariétal;
- soit se fragmenter et donner sur son trajet des denticles libres, un denticle pariétal à sa base et des débris épithéliaux intrapulpaires quiescents;
- soit s'entourer de dentine et y rester enfermé, ce qui permet à l'épithélium de persister à l'intérieur du denticle comme un noyau organique dégénéré ou comme un noyau amorphe calcifié.

Ajoutons pour notre part qu'il ne faut pas s'étonner que ces replis invaginés de la gaine épithéliale interne se fragmentent en îlots, car nous savons que c'est là une tendance propre à la gaine de Hertwig.

Les reliquats épithéliaux intrapulpaires (tout comme les denticles) se rencontrent avec prédilection dans ces deux régions

dont l'organogénèse est si complexe: la région apicale et la région de la bifurcation des racines.

Quel rôle peuvent jouer éventuellement les îlots épithéliaux intrapulpaux libres dans l'épithélisation des polypes? Nous ignorons encore quelle est la fréquence réelle de ces accidents dysontogénétiques et si elle est suffisante pour les faire prendre en considération dans ce problème.

Par contre, les *débris épithéliaux paradentaires* de Malassez sont susceptibles de jouer le même rôle, et pour eux ne se pose aucune question de fréquence: le nombre d'épithélio-granulomes apicaux qu'ils engendrent en est la preuve évidente.

On sait aujourd'hui que, contrairement à certaines descriptions classiques, ces restes épithéliaux forment dans le ligament alvéolo-dentaire un réseau presque continu (BRUSZT), mais on ne peut le voir que sur les coupes tangentielles, presque parallèles à la surface radiculaire. Les mailles de ce réseau sont plus serrées dans la partie cervicale, et plus lâches dans la région apicale (NOYES et SCHOUR). On peut rencontrer des traces de ce réseau ou des îlots séparés sur toute la hauteur des racines ainsi que dans la région de la bifurcation des pluriradiculées (où ils participent à la formation des épithélio-granulomes interradiculaires).

Les reliquats épithéliaux paradentaires susceptibles de jouer un rôle dans l'épithélisation des polypes sont évidemment les éléments situés à l'orifice des canaux pulpaux. Il faut comprendre ici non seulement les orifices apicaux, qui peuvent être multiples (recherches de HESS), mais aussi les canaux aberrants que l'on trouve le plus souvent dans la bifurcation des racines, comme l'ont montré BRABANT, KLEES et PHILIPPART. Ils se forment par fragmentation prématurée de la gaine de Hertwig, ou par fusion incomplète des extensions horizontales du diaphragme épithélial qui produit la bifurcation (SCHOUR et MASSLER).

On peut donc répondre positivement à

la première question: Il peut exister parfois, rarement sans doute, des éléments épithéliaux libres, quiescents, dans le tissu pulpaire lui-même. Il existe d'autre part le plus souvent des débris épithéliaux de Malassez dans la membrane périodontale, au voisinage des orifices des canaux pulpaux apicaux et accessoires.

Il reste désormais à trancher une dernière question:

b) *Ces éléments épithéliaux, qu'ils se trouvent dans la pulpe radiculaire ou dans le périodonte à l'orifice des canaux, sont-ils susceptibles de parvenir jusqu'à la surface des polypes pour y constituer un revêtement épithélial?*

Il a déjà été démontré dans le passé que sous l'action de phénomènes inflammatoires, les débris épithéliaux de Malassez peuvent être réactivés, proliférant sous forme de tractus qui s'introduisent dans les canaux radiculaires. K. JARMER a relevé dans la littérature diverses observations de ce genre dont il indique les références:

Cela peut se produire dans des dents permanentes à l'occasion de simples pulpites*, ou dans des dents temporaires au cours de la résorption radiculaire, les éléments épithéliaux étant entraînés dans les canaux par le tissu de bourgeonnement (HOJYO);—ou encore dans l'expérience de WEBER, qui a vu des abcès pulpaux recouverts d'épithélium sur des germes de dents permanentes.

JARMER montre lui-même deux exemples qui ne peuvent laisser aucun doute sur l'origine de l'épithélium de couverture:

Le premier cas concerne une pulpite purulente ouverte qui est en train de se couvrir d'épithélium venu de la profondeur, où l'on perd sa trace. Le second cas est une pulpite chronique granulomateuse ouverte, c'est-à-dire un jeune polype, où l'on voit des tractus épithéliaux cheminer depuis l'apex jusqu'à la surface du polype, en s'insinuant le long de la paroi du canal radiculaire.

*Observations de Romer, Adrion, W. James, R. Weber, O. Muller, W. Franke, citées par K. Jarmer.

Nous pouvons à notre tour présenter une observation où l'épithélium de couverture du polype vient de la profondeur des tissus pulpaire: il s'agit d'une molaire supérieure atteinte d'une carie pénétrante avec ouverture de la pulpe coronaire et pulpite proliférative chronique. De l'orifice pulpaire sortait un petit polype de la grosseur d'une lentille (fig. 6), situé dans la cavité à égale distance des racines palatine et vestibulaires. Le patient était âgé de 18 ans.



FIG. 6. Coupe d'une dent portant un petit polype pulpaire en cours d'épithélisation par voie transpulpaire, comme le montrent les figures suivantes (x6).

Cette dent fut fixée au formol salé, décalcifiée à l'acide trichloracétique à 5 p. 100 (contrôle radiographique), incluse en paraffine, puis débitée en coupes sériées. Les premières coupes furent faites dans le plan de la racine palatine. Colorées par l'hématoxyline-éosine, elles montrèrent un polype recouvert de formations irrégulières de tissu épithélial (fig. 7).

Contrairement aux polypes épithélisés que nous avons observés jusqu'alors, celui-ci ne présentait pas une couche d'épithélium pavimenteux stratifié d'aspect analogue à l'épithélium gingival. Il n'y avait pas une différenciation nette en trois couches cellulaires (basale cylindrique, intermédiaire polyédrique, superficielle squameuse). D'autre part, on ne trouvait pas de digitations épithéliales de profondeur limitée vers l'intérieur du polype.

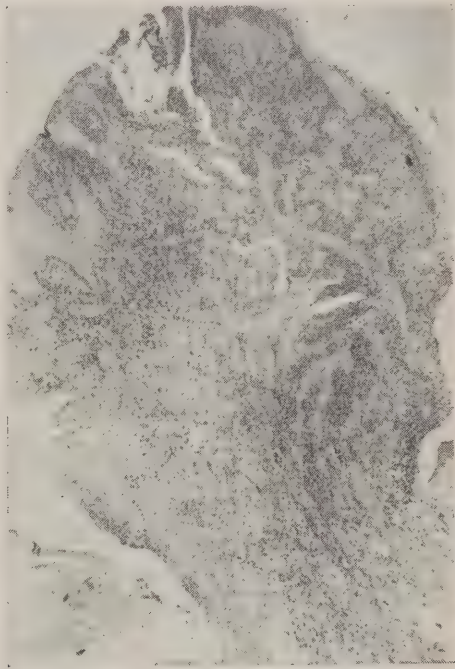


FIG. 7. Aspect d'ensemble du polype montrant le parcours des tractus épithéliaux venus du pédicule, enchevêtrés dans la partie centrale et s'épanouissant à la périphérie du polype (x60).

Par contre, il existait dans la partie rétrécie ou pédicule de ce polype de nombreux tractus épithéliaux, longs, étirés, qui paraissaient sortir des tissus de la chambre pulpaire. Un peu plus haut, dans la partie centrale du polype, on les retrouvait, nombreux, sinueux, enchevêtrés, disparaissant en un point pour reparaitre plus loin; cet enchevêtrement occupait une grande partie de la masse totale.

Enfin, vers la périphérie du polype, ces cordons épithéliaux s'évasaient, paraissant s'étaler vers la surface, où ils formaient une couche terminale épaisse, mais divisée en masses plus ou moins confluentes.

On ne trouvait donc pas de nettes digitations épithéliales limitées, mais au contraire il y avait une arborescence de tissu épithélial qui se déployait vers la surface à partir de la racine du polype (fig. 7).

Discussion

Dans la présente observation, trois faits essentiels se trouvent démontrés: a) que ces arborescences et la couche périphérique à laquelle elles aboutissent sont constituées par du tissu épithélial; b) que les caractères cytologiques de celui-ci correspondent à un épithélium jeune, terminant sa prolifération; c) que cette prolifération épithéliale "sort" de la chambre pulpaire et se propage en direction centrifuge vers la surface du polype.

Le premier point ne saurait faire de doute pour les épaisses couches de tissu qui bordent la surface du polype et qui présentent les caractères d'un épithélium pavimenteux stratifié (fig. 11).

En ce qui concerne les tractus enchevêtrés que l'on voit au centre de la masse et surtout les bandes de tissu rectilignes que l'on trouve dans le pédicule du polype, il s'agit aussi de tissu épithélial. En effet, non seulement une certaine continuité de tous les éléments précités peut être observée, mais la morphologie cytoplasmique et surtout nucléaire est identique partout (fig. 8, 9, 10, 11): protoplasma uniforme, gros noyaux allongés, pâles, avec un réseau lâche et fin de chromatine et un gros nucléole fortement chromophile. Enfin, les réactions histo-chimiques ont été probantes quant à la nature des tractus situés dans le corps et le pédicule du polype: la réaction d'Hotchkiss pour les polysaccharides a démontré la présence d'une membrane basale Schiff-positive entre ces cordons et le tissu de granulation environnant. *Il s'agit donc bien de tissu épithélial et non d'arborescences vasculaires comme*

on aurait pu le penser à première vue.

D'autre part, nous pouvons observer



FIG. 8. Un des tractus épithéliaux E, observés dans le pédicule du polype: cellules allongées, d'aspect étiré, à noyaux clairs et nucléole distinct.—G, tissu de granulation formant la masse du polype. (x700 environ).

que les caractères cytologiques de ce tissu sont ceux d'éléments épithéliaux *jeunes*, dont la prolifération n'est pas encore terminée, toute la surface extérieure du polype n'étant pas encore recouverte. Leur stade évolutif correspond à ce que divers auteurs ont observé dans l'épithélisation précoce des plaies d'extraction, et que certains appellent couverture épithéliale *provisoire*. Ce premier recouvrement se fait sans doute très rapidement, de manière presque anarchique. Nous n'en voulons pour preuve que l'impression de "bousculade" que donnent nos images histologiques, où l'on voit des lymphocytes et des polynucléaires, initialement situés dans le tissu de granulation, qui ont été englobés dans cette prolifération épithéliale et que l'on re-

trouve inclus entre les cellules polyédriques (fig. 10 et 11).

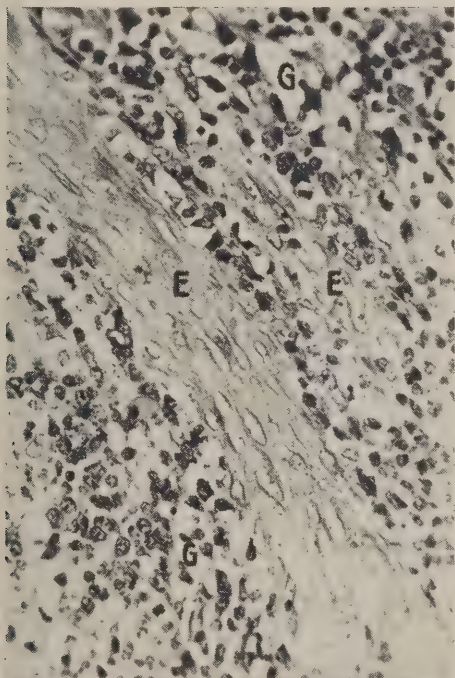


FIG. 9. Autres tractus épithéliaux E, E, dans la région du pédicule. Mêmes caractères cytologiques; une membrane basale (décelée par la coloration d'Hatchkiss) était présente, démontrant la nature épithéliale de ce tissu.—G, tissu de granulation. (x700 env.).

Enfin il ressort avec une complète évidence que cette prolifération de tractus épithéliaux s'est faite de manière centrifuge de la pulpe vers le polype. Une évolution en sens inverse est impensable: il faudrait admettre que des digitations venues de la périphérie ont convergé vers le pédicule, c'est-à-dire vers la pulpe. . . Les images ci-jointes démontrent le contraire. En effet, même à l'extrême périphérie du polype, nous observons que des polynucléaires et lymphocytes de l'ancienne couche superficielle subsistent encore à l'extérieur de l'épithélium (fig. 11), comme si ce dernier, récemment parvenu à la surface, n'avait pu encore les isoler et les éliminer au dehors. Un épithélium recouvrant le polype depuis longtemps n'aurait pas laissé ainsi à sa

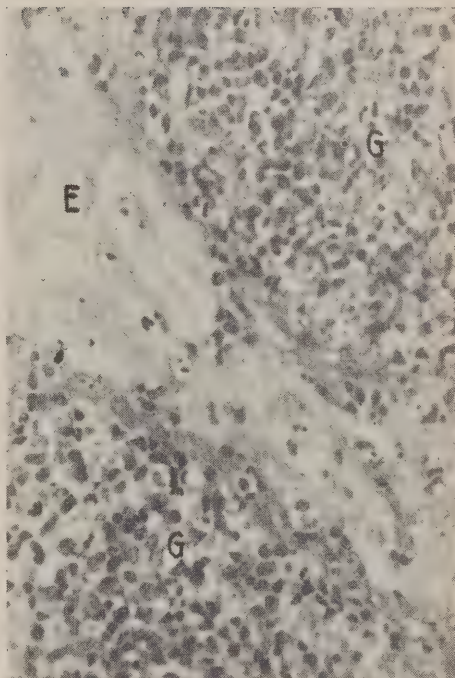


FIG. 10. Un des tractus épithéliaux s'efforçant d'atteindre la surface du polype. Modification progressive de la morphologie cellulaire, qui perd son aspect étiré et tend à devenir polyédrique. Quelques lymphocytes et polynucléaires du tissu de granulation G ont été englobés dans la prolifération rapide de l'épithélium E. (x700 env.).

surface des cellules d'inflammation chronique. . .

Il s'agit donc ici d'un revêtement formé d'éléments épithéliaux venus de la profondeur et encore peu organisés. Son remaniement, sa stratification en trois couches (cylindrique, polyédrique, squameuse) se seraient produits ultérieurement, si la dent n'avait pas été extraite. Ils auraient eu pour corollaire une diminution consécutive de l'infiltration inflammatoire du tissu de granulation sous-jacent: l'ensemble réalisant alors l'aspect habituel des polypes épithélisés, "ceux qui figurent dans nos traités et qui représentent des formes déjà évoluées vers la maturation" (JARMER).

Il est très probable qu'une telle épithélisation d'origine interne constitue un processus habituel. Mais nous n'en voyons toujours que le résultat final et déjà fixé.

C'est que cette "flambée épithéliale" que suggèrent nos figures est sans doute très rapide et passagère. Il doit falloir quelque chance pour en surprendre le cours* sur des polypes qui durent eux-mêmes des mois ou des années.

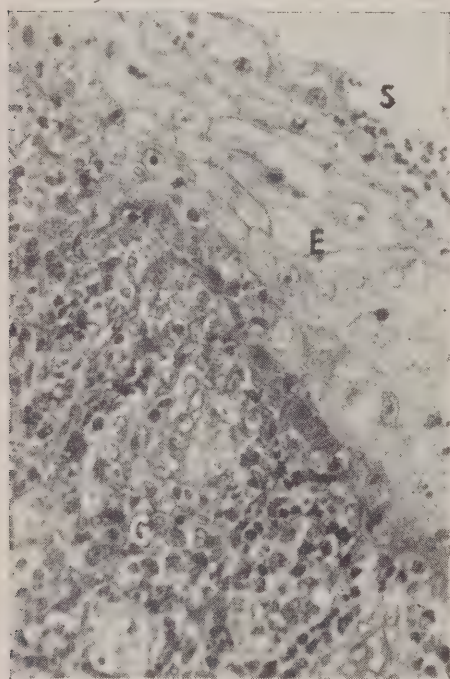


FIG. 11. Couche d'épithélium E parvenue à la périphérie du polype: Etallement des cellules épithéliales. Quelques lymphocytes et polynucléaires de l'ancienne zone superficielle S se trouvent isolés à l'extérieur de l'épithélium; d'autres sont enchâssés entre les cellules polyédriques.—G, tissu de granulation. (x700 env.).

Il est probable aussi qu'il n'en reste très vite nulle trace dans la pulpe, ni dans la masse du polype, ces coulées cellulaires s'épuisant et disparaissant en arrière aussi vite qu'elles progressent en avant (tout comme la gaine de Hertwig des restes de laquelle elles tirent leur origine. . .). C'est pourquoi les polypes recouverts d'épithélium adulte, ni leur pulpe, ne présentent pas d'éléments épithéliaux visibles au-dessous de leur revêtement.

En fait, nous n'avons pu trouver de reliquats d'épithélium dans les canaux radiculaires de cette dent, malgré un examen soigneux de coupes en séries (la dent ayant 3 canaux dont 2 parallèles, 2 plans de coupe successifs, formant un angle très ouvert, ont été nécessaires).

Sachant que les tractus épithéliaux du polype sont venus de la profondeur de la pulpe, comme nous l'avons démontré plus haut, nous ne pouvons expliquer ce fait que par la disparition de ces éléments épithéliaux tout au long du trajet qu'ils ont suivi pour parvenir au polype. Cela n'a rien d'étonnant, répétons-le une fois de plus, car c'est là un caractère propre aux éléments issus de la gaine de Hertwig. On retrouve d'ailleurs un tel phénomène dans tous les processus d'involution affectant la lame dentaire.

Quelle qu'ait été ici la situation originelle des éléments épithéliaux impliqués (au niveau des canaux apicaux ou aberrants, ou dans la pulpe elle-même), ils ont proliféré, puis disparu par fragmentation extrême des tractus, dégénérescence cellulaire ou même cytolysse sur place comme l'avait vu MALASSEZ et plus tard MASSON et PEYRON (cités par BERCHER).

On peut se représenter ainsi le déroulement du processus qui aboutit à l'épithélisation d'un polype pulpaire:

Dans une première phase se produit une inflammation pulpaire généralisée, mais la pulpe étant ouverte dans la cavité de carie, et d'autre part bien vascularisée, son parenchyme a tendance à se transformer en tissu de granulation, dont le bourgeonnement produit une sorte de hernie à l'extérieur de la pulpe coronaire vers la cavité de carie. Des reliquats épithéliaux situés au voisinage d'un canal apical ou accessoire sont réactivés et se mettent à proliférer sous l'action de l'inflammation chronique, comme ils le feraient après une gangrène pulpaire pour former un épithélio-granulome. Mais leur prolifération se fait ici vers le tissu de granulation qui a remplacé la pulpe normale. Elle aboutit à recouvrir d'épithélium ce tissu de granulation comme elle le ferait pour les bour-

*On sait que normalement une plaie d'extraction s'épithélise en 6 jours (Claflin).

geons conjonctifs d'une plaie. Une fois installée et organisée, cette couverture épithéliale perd ses connections avec les éléments épithéliaux profonds qui lui ont donné naissance, en même temps que diminue considérablement l'infiltration inflammatoire du tissu pulpaire. Celle-ci disparaîtra même totalement dans la profondeur où la pulpe tendra dès lors à se modifier lentement vers la sclérose ou l'infiltration calcaire.

Il ne s'agit pas là, comme le remarque JARMER, d'une migration, mais d'un processus de croissance des cellules épithéliales vers la "tête" du polype.

On pourra d'ailleurs admettre ce fait très aisément, si l'on a présent à l'esprit un phénomène qui lui est étroitement lié et qui a été démontré par les recherches du Professeur RADDEN: celui de la croissance de fibres nerveuses à partir des rameaux nerveux pulpaire, et qui passant par le pédicule du polype viennent se ramifier dans l'intérieur de l'épithélium qui le recouvre. *Ces fibres nerveuses issues de la pulpe, qui cheminent notamment à l'intérieur des digitations épithéliales, n'existent pas dans les polypes sans épithélium. On les trouve par contre constamment dans les polypes épithélisés.*

"La constance des résultats cliniques relatifs à l'analyse de la sensibilité et des vérifications histologiques sur les polypes épithélisés prouve que l'épithélisation est responsable en quelque manière de l'innervation très avancée de ces polypes" (H. G. RADDEN).

Nous pensons quant à nous que le cheminement des fibres nerveuses néoformées vers la périphérie des polypes épithélisés est une confirmation supplémentaire que les tractus épithéliaux suivent un chemin analogue pour parvenir à la surface des polypes.

Une dernière question vient à l'esprit. Pourquoi tous les polypes pulpaire ne se recouvrent-ils pas d'épithélium? Il est probable que les polypes qui restent à l'état de tissu de granulation exposé directement au milieu buccal ne s'épithélisent pas en raison de l'impossibilité d'un

contact direct et prolongé avec la gencive, et de l'absence d'éléments épithéliaux activables dans les régions de la pulpe ou du périodonte susceptibles d'être atteintes par le processus inflammatoire chronique.

C'est sans doute la raison pour laquelle les polypes des dents temporaires sont bien plus souvent épithélisés que ceux des dents permanentes (fait constaté par HILDE FREY): les orifices radiculaires des dents temporaires sont en effet plus larges et d'autre part, au cours de la résorption des racines, ils sont normalement le siège de remaniements importants qui peuvent atteindre de nombreux îlots épithéliaux. On sait enfin que ces débris épithéliaux de Malassez sont très nombreux dans le jeune âge, surtout au niveau des dents de lait, et se raréfient considérablement par la suite (NOYES et SCHOUR), au fur et à mesure que le sujet avance en âge et que se ferment les orifices apicaux.

Conclusions

Il ressort de l'analyse du problème de l'épithélisation des polypes pulpaire, des résultats de greffes épithéliales expérimentales (RADDEN, JANSKY) et des observations histologiques faites par JARMER et par nous-même:

1°—Que l'épithélisation des polypes pulpaire ne se fait *probablement jamais par transplantation à distance* d'éléments épithéliaux venus de la muqueuse buccale.

2°—Que cette épithélisation se fait directement à partir de la gencive dans les *rare cas où un contact direct* et prolongé peut s'établir entre elle et le polype.

3°—Que dans les autres cas, l'épithélisation se produit à la suite d'une *réactivation des reliquats épithéliaux* de Malassez par l'inflammation chronique de la pulpe. Leur prolifération transpulpaire se fait très rapidement depuis la profondeur jusqu'à la surface exposée du polype. L'épithélium, ayant recouvert celle-ci, perd très vite ses connexions avec les éléments épithéliaux originels.

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L'équivoque est-elle une erreur ou un bienfait dans l'alimentation?

par Paul-E. Poitras, D.D.S., Montréal.

Les nombreuses journées d'études auxquelles j'ai assisté ne m'ont pas été également utiles parce que les conférenciers, dans plusieurs cas, pensaient à ne pas être en opposition avec des théories déjà démontrées; ils aimaient mieux se servir de phrases nébuleuses dans l'exposé plus ou moins didactique de leur érudition que se taire. Aussi je ressentais dans l'âme une compréhension difficile à établir bien que ces enseignements de perfectionnement étaient présumés améliorer les connaissances scientifiques qui tout de même ne m'étaient pas toujours ignorées.

Les auditeurs dont le tempérament varie, le caractère differt, l'intelligence est plus ou moins vive ne savent pas quelle décision prendre en face de termes ambigus: l'âne de Buridan n'avait-il pas également faim et soif? Perplexes, ils hésitent à identifier l'idéal et le réel, à abandonner l'imaginaire et le faux, ils essaient de conclure sans discernement le vrai, demeuré pour eux obscur. Ce manque de précision, cette confusion de

mots, se nomme *équivoque* même s'il est considéré par plusieurs de bonne politique. Sur la clôture, des orateurs, des écrivains sont ni pour, ni contre telle innovation, ils observent les reflex des masses et se rangent autour de la majorité. Aujourd'hui la preuve est faite: la fluoruration de l'eau potable diminue environ soixante pour cent la carie dentaire. Toutefois, des politiciens mal conseillés s'y opposent, étant influencés par l'action néfaste de l'équivoque. Les savants seraient en droit de mettre en lumière l'utilité du fluor, mais ils veulent accepter aucune responsabilité, même si elle représente une contribution importante à l'hygiène dentaire.

L'autoritarisme du dictateur, afin d'obtenir et maintenir une obéissance absolue à ses décisions, possède une arme à son service: l'équivoque. Il trompe, de cette façon, une société qui ne pense pas toujours comme lui. Il tente de vaincre l'individualiste, le rebelle, celui dont l'opinion diffère de la sienne, il lutte contre

la démocratie devenant inexistante dès que la libre discussion est bannie. Quand un chacun vote oui à la demande du chef, le peuple cesse d'exercer sa souveraineté et la démocratie est morte.

Est bon médecin celui qui découvre chez son patient la maladie que celui-ci croit avoir, pourvu que ce malade soit soigné pour celle qu'il a et dont il ne se doute pas. Cependant, je reconnaitrai comme un signe de faiblesse lorsqu'il arrivera sciemment à un individu d'agréer des idées médiocres comme supérieures, alors qu'il en fera passer d'autres plus élevées à un rang inférieur du fait qu'elles sont nouvelles.

Combien de gens n'ont pas le courage de leurs opinions et se servent de l'équivoque pour rejeter à tous venants leurs hésitations. Heureusement le nombre est grand des audacieux qui n'ont pas peur d'exposer franchement leurs travaux et même de les publier, sans s'occuper des intérêts adverses.

Toutes les forces, nées de l'équivoque, sont menaçantes au point de ne pas toujours pouvoir les combattre; elles sont comme l'ombre, elles se modifient, elles s'esquivent, elles changent à la suite de certaines particularités connues. Pourquoi ne nous assujettirions-nous pas à une simple règle? Celle de ne jamais ajouter foi à l'équivoque, de demander toutes les explications nécessaires de façon à comprendre les énoncés du problème, d'exiger plus de clarté dans les définitions. Rien ne détruira l'équivoque comme de vouloir une meilleure énonciation, une réponse moins confuse, plus de précision dans les expressions!

Il y a plusieurs années, le docteur Weston-A. Price, dentiste de réputation internationale, fut dénigré par des confrères en dépit de ses expériences *in vitro* et *in vivo*, où il avait découvert que certaines maladies dentaires étaient occasionnées par la consommation de certains aliments.

Des réclames ambiguës, payées par les meuniers et les producteurs de denrées manufacturées s'efforçaient de démontrer que les explications de cet homme d'étude

étaient fausses, de la peur qu'ils avaient d'être obligés d'admettre que les nouvelles connaissances changeraient la manière de voir de leurs clients et diminueraient leurs gains. L'influence de cette publicité suspecte fit rétrograder, au lieu de progresser, la civilisation jusqu'au moment où le gouvernement exigea l'analyse des conserves de viande, de légumes en vue d'écarter du marché le frelatage. Je reconnais que le Ministère du Bien-Etre et de la Santé du Canada fut toujours attentif aux recommandations du corps médical, sans jamais chercher à se dérober à son devoir.

L'énergie humaine a besoin environ de trois mille calories pour se bien porter et épargner à l'homme les tiraillements de la faim susceptibles de le rendre vraiment esclave de sa misère. Les pays de l'Amérique du Nord arrivent facilement à ce chiffre à cause de l'abondance de leurs récoltes alors qu'une ère de disette sévit dans d'autres contrées surpeuplées.

Un Bureau des Vivres et de l'Agriculture, relevant de l'Organisation des Nations Unies, fonctionne dans le but de favoriser la répartition des surplus de nourriture pour que les privilégiés viennent en aide aux pays sous-nourris. Dans une assistance empressée et généreuse, même intéressée, le Canada y offre son blé. Depuis des années, à la suite de bonnes récoltes, le pays dispose d'un surplus de millions de boisseaux de froment et l'écoulement de cette céréale contribuerait non seulement à décongestionner nos entrepôts, mais aussi à dispenser le gouvernement fédéral de verser des indemnités aux agriculteurs des prairies. Trente-six pays de l'O.T.A.N. ont signé une entente par laquelle les surplus nécessaires à la vie sont régis afin de fournir à tous les peuples menacés de famine une bonne nourriture, de leur donner un moyen de se développer, de les inciter à cultiver plus de graminées, d'assurer l'équilibre économique d'une prospérité saine et durable.

Les journaux ont annoncé la signature de contrats entre le Canada et des pays du rideau de fer où il est question de la

vente et de l'achat du blé canadien dont une partie (c'est une opinion personnelle) sera peut-être vendu en Asie sous le nom de blé d'Ukraine. Il servira la propagande communiste et travaillera à la ruine de la doctrine des pays occidentaux.

Ce Bureau des Vivres et de l'Agriculture, riche en nourriture, devrait pourvoir à la subsistance alimentaire des nations menacées dans leurs besoins vitaux en augmentant les matières albuminoïdes, grasses, les hydrates de carbone pour que la valeur de céréales comme l'orge,

le maïs, le riz, etc., leur soient un souci et une responsabilité, compte-tenu des mœurs, des coutumes, de la mentalité des indigènes menacés de famine.

Le ravitaillement va de pair avec la production agricole; c'est pourquoi il faut aider au développement de la culture, organiser le crédit, intensifier le rendement des terres des peuples sous-nourris alimentés, par exemple: en leur déléguant des ingénieurs-agronomes qui sauront étudier les sols et obtenir des produits plus nombreux et meilleurs.

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Nouvelles de l'Association

Nombre de dentistes au Canada—1956

Entre janvier 1955 et janvier 1956, le nombre de dentistes au Canada a augmenté de 62 unités, comme l'indique le tableau 1. Durant la même période, la population a augmenté de 406,000 habitants. En établissant la proportion de ces dentistes additionnels à l'augmentation de la population, on se rend compte qu'il y a un nouveau dentiste pour 6,548 nouvelles personnes en surplus sur le total de la population de l'année dernière.

La proportion des dentistes en rapport avec la population était, en janvier 1955 d'un dentiste pour 8,838 personnes. En janvier 1956, la proportion s'est aggravée; elle est

maintenant d'un dentiste pour 2,881 personnes. On ne peut pas s'attendre à une amélioration dans ce domaine tant que les facultés dentaires ne disposeront pas de facilités plus grandes pour recevoir plus d'étudiants. On s'attend à ce que la population accroisse encore son nombre au cours des prochaines années. Les facultés dentaires actuelles continueront de former à peu près le même nombre d'élèves qu'en 1955 tant qu'elles ne pourront pas disposer de facilités plus grandes.

Il est à noter que les nouveaux diplômés se fixent davantage au Canada. Durant l'année dernière seulement onze dentistes canadiens ont laissé le pays (tableau 2).

TABLEAU I
CHIFFRES STATISTIQUES AU SUJET DU NOMBRE DES DENTISTES AU CANADA
(tels que rapportés par les registraires provinciaux en janvier 1956)

Province	Nombre de dentistes rapporté			Durant 1955				Augmentation ou diminution totale 1938*	Proportion du nombre des dentistes en rapport avec le chiffre de la population
	Hommes	Femmes	Totaux	Morts	Retraites	Déménagés	Additions		
T.-N.	32	3	35	0	0	3	5	+16	1/11771
I.P.E.	33	0	33	0	0	1	1	+3	1/3273
N.-E.	195	3	198	4	1	4	9	+29	1/3449
N.-B.	121	1	122	0	0	2	5	+12	1/4574
P. Qué.	1290	4	1294	10	12	5	34	+417	1/3493
Ont.	2240	30	2270	31	20	9	87	+338	1/2283
Man.	254	1	255	5	1	3	9	+1	1/3329
Sask.	215	2	217	5	0	6	9	+2	1/4097
Alta.	377	6	383	2	3	8	22	+146	1/2783
C.-B.	608	6	609	11	3	2	27	+241	1/2143
Total.	5360	56	5416	68	40	43	208	+1205	1/2881

Les chiffres des populations utilisés sont ceux publiés par le Bureau fédéral de la Statistique pour juin 1955.

*Les chiffres des augmentations ou des diminutions comparés à ceux de l'année d'avant-guerre 1938 sont alignés pour des fins de comparaison.

TABLEAU II
MIGRATION DES DENTISTES CANADIENS DURANT 1955

A:	T.-N.	I.P.E.	N.-E.	N.-B.	P. Qué.	Ont.	Man.	Sask.	Alta.	C.-B.	E.-U.	Angleterre	Australie	Haiti	Territoires du N.-O.	Total
De:																
T.-N.	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	3
I.P.E.	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
N.-E.	0	1	0	0	0	1	0	0	0	1	1	0	0	0	0	4
N.-B.	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
P. Qué.	0	0	0	1	0	2	0	0	2	0	0	0	0	1	1	5
Ont.	0	0	0	0	0	0	0	1	2	2	0	1	3	0	0	9
Man.	0	0	0	0	0	2	0	0	1	1	0	0	0	0	0	3
Sask.	0	0	0	0	0	0	2	0	3	1	0	0	0	0	0	6
Alta.	0	0	0	0	0	1	0	0	0	6	0	0	0	0	0	8
C.-B.	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
Total	0	1	2	1	0	8	2	1	5	11	4	3	3	1	1	43

TABLEAU III
NOMBRE DE SPECIALISTES, PAR PROVINCE
(seuls les dentistes, qui consacrent tout leur temps à l'exercice de leur spécialité)

	T.-N.	I.P.E.	N.-E.	N.-B.	P. Qué.	Ont.	Man.	Sask.	Alta.	C.-B.	Total
Orthodontie	0	0	1	1	14	42	3	2	4	8	75
Chirurgie (Exodontie)	0	0	1	0	3	30	4	0	4	6	48
Périodontie	0	0	0	0	2	15	1	0	1	2	21
Pédodontie	0	0	0	0	0	5	2	0	0	5	12
Total	0	0	2	1	19	92	10	2	9	21	156

TABLEAU IV
NOMBRE DE DENTISTES EMPLOYES DANS LE SERVICE DE SANTE, DANS LES PROVINCES
en janvier 1956

	T.-N.	I.P.E.	N.-E.	N.-B.	P. Qué.	Ont.	Man.	Sask.	Alta.	C.-B.	Total
Ecoles dentaires: (Personnel enseignant)											
Plein-temps	0	0	3	0	10	11	0	0	3	0	27
Demi-temps	0	0	0	0	13	9	0	0	25	0	47
Service Hospitalier:											
Plein-temps	2	0	3	2	0	31	3	0	4	4	49
Demi-temps	0	0	0	1	0	5	0	0	0	2	8
Service Scolaire:											
Plein-temps	0	0	1	1	15	17	2	1	5	22	64
Demi-temps	0	0	3	2	6	57	1	1	2	1	73
Service d'Hygiène Publique:											
Plein-temps	2	2	2	1	7	15	3	7	0	6	45
Demi-temps	0	0	0	0	6	0	0	0	0	1	7
Total	4	2	12	7	57	145	9	9	39	36	320

TABLEAU V

NOMBRE TOTAL DES DENTISTES EMPLOYES PAR LE GOUVERNEMENT FEDERAL

(plein-temps)

en janvier 1956

Ministère des Affaires des Vétérans.....	39
Ministère de la Défense Nationale.....	151
Ministère de la Santé nationale et du Bien-Etre social.....	12
Total.....	202

L'A.D.C. offre un plan d'assurance spécialement pour les étudiants

L'Association dentaire canadienne vient d'élaborer un plan d'assurance à coût modique pour les étudiants en chirurgie dentaire. De cette façon, les étudiants pourront se protéger et aussi ceux qui s'intéressent pécuniairement à leurs études, durant les deux dernières années de leur cours et durant les trois premières années de leur pratique, après la fin de leurs études.

Ce plan d'assurances permet aux étudiants de se qualifier pour le plan d'assurance-pension ordinaire de l'A.D.C., quand ils auront des revenus suffisants; ils pourront convertir ce plan temporaire en un plan permanent en aucun temps au cours des trois années après la fin de leurs études, sans examen médical et sans apporter d'autres preuves de leur assurabilité.

Les caractéristiques de ce plan d'assurances pour étudiants sont les suivantes:

- 1) Tous les étudiants des deux dernières années du cours peuvent s'assurer jusqu'à un montant de \$15,000.00 sans qu'ils aient à établir leur assurabilité, à condition que 75% des étudiants y participent.
- 2) On peut porter le montant d'assurances à \$25,000.00 et les étudiants des autres années peuvent s'inscrire au plan, mais, dans ces cas, la police sera particulière et il faudra subir un examen médical.
- 3) Il faut avoir moins de trente ans pour s'assurer.
- 4) L'assurance couvre le temps qui reste jusqu'à la fin des études et les trois premières années d'exercice.
- 5) Le montant minimum est de \$5,000.00; le maximum: \$25,000.
- 6) Le montant de la prime est de \$3.25 par mille dollars d'assurances, plus 0.50 pour que la police reste en vigueur sans qu'on ait à payer de prime en cas d'incapacité totale; cette clause est obligatoire. La prime est la même pour tous les âges et pour toutes les années où elle est en vigueur (5 ans).
- 7) Quand la police est émise, chaque assuré peut continuer son contrat, sans qu'on tienne compte du pourcentage de la participation, plus tard.

8) Le plan d'étudiants peut se convertir au plan permanent offert aux membres de l'A.D.C. sans qu'on ait à établir son assurabilité. Ce privilège est considérable, si on tient compte des taux extrêmement modiques de l'assurance permanente (voir livraison de janvier 1954 du Journal).

Il faut s'adresser à l'Association dentaire canadienne, Bureau d'administration des assurances, Boîte postale 70, Brockville, Ontario.

Les étudiants consulteront avec profit la section "Economic Security" du Journal de l'Association dentaire canadienne pour obtenir des renseignements sur divers genres d'assurances de l'A.D.C. et sur d'autres questions de sécurité dans l'exercice dentaire.

Notes sur la fluoruration

—Les citoyens de North Bay ont voté en faveur de la fluoruration, au cours de leurs élections municipales en décembre dernier. La mesure a été approuvée par 440 voix de majorité. Il faut féliciter la Société dentaire de North Bay pour l'excellente campagne de publicité qu'elle a conduite avant la votation. —Cinq villes de l'ouest de l'Ontario, London, Windsor, Chatham, St-Thomas et Sarnia s'attendent à régler la question de fluoruration maintenant que le Ministère de la Santé de l'Ontario s'est prononcé, dans un rapport, sur les bénéfices et la sécurité de la mesure.

La province d'Ontario dotée d'une Commission d'assurance-santé

Le 23 décembre, le premier ministre d'Ontario, M. Frost, a déclaré que son gouvernement, s'apprête à mettre sur pied une commission d'assurance-santé s'apparentant à la Commission Hydro-électrique. On croit qu'un bill à cet effet sera présenté à la prochaine session.

La Colombie-Britannique augmente son octroi

Le registraire du Collège des Chirurgiens-Dentistes de la Colombie-Britannique confirme officiellement que l'octroi annuel à l'Association dentaire canadienne sera porté, dès 1956, à \$25.00 pour chacun des dentistes exerçant dans cette province.

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Emile Magitot

"The father of experimental dentistry"

by J. F. VOLKER, Birmingham, Alabama.*

Editorial Note—Dr. J. F. Volker delivered the following address on the occasion of his acceptance of the presidency of the International Association for Dental Research in St. Louis on March 26, 1956. Because of the bilingual character of the J.C.D.A., an invitation was extended to Dean Volker to publish his paper here. Dr. Volker, graciously complied with this request.

It is the tradition of the International Association for Dental Research that the incoming president shall have the privilege and obligation of addressing his fellow members on a subject of his own choosing. In the past, incumbents have usually reviewed a pertinent research field, given a philosophical dissertation on research, or have related their experiences in some distant land. There is a great personal temptation to adopt the latter course especially since such a presentation lends itself to illustrations already on hand and imparts useful and entertaining information. I have chosen, however, to exercise the prerogative of being unconventional and will devote my remarks to the life of Emile Magitot.

Although I recognize that my judgment is subject to prejudice, I am sincere in the belief that no other person has made as great a contribution to dental research. In my own opinion, his accomplishments rank with, or possibly exceed, those of W. D. Miller or G. V. Black although I appreciate that such a statement will be viewed as heresy by many of my contemporaries. It is my hope that before you pass judgment in the matter I will be privileged to present relevant biographic and bibliographic support for my conclusions.

Magitot was born in Paris in 1833. That he was predestined for a career in dental research seems inevitable since his father, a physician, was a practising dentist. At an early age he made the de-

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cision to study medicine, and at age twenty-four he graduated as a physician, presenting as his thesis requirement an essay on "The Development and Structure of Teeth." Immediately thereafter he continued these researches in collaboration with Robin, the famous professor of anatomy. With him, he published in the *Journal de Physiologie* in the years 1860 and 1861, the "Genesis and Evolution of Teeth in Man and the Lower Animals." Shortly thereafter, in association with Legros, he undertook a study of the formation and eruption of the teeth which has been basic to all subsequent studies on the chronology of the human dentition. His career as an active investigator extended over a period of forty years, during which time he had approximately sixty-five publications covering almost every phase of dental research including anatomy, embryology, histology, pathology, physiology, biochemistry, as well as making pertinent observations in the area of oral diagnosis and treatment.

Although all of his work is of excellent calibre, it is probable that his great work, "Treatise on Dental Caries," published in 1877, deserves special commendation. It is most fortunate that these contributions have been translated into English by Thomas Chandler, the onetime dean of the Dental School of Harvard University.

Throughout his professional career Magitot held firm to the conviction that persons practising dentistry should initially qualify in medicine. This brought him into active opposition with the dentists in France. Their bitter feelings toward him are best illustrated by excerpts taken from his obituary authored by a member of the faculty of the Dental School of Paris and published in *L'Odonologie*:

"... Magitot was the pioneer in that branch of medical science known as stomatology. In 1888 he founded the Society of Stomatology, composed of dentists who had taken the medical degree, and was president by re-election from year to year until his death. If he had been asked, "Are you a dentist?" he would have re-

plied, "No, I am a stomatologist." While most of his work related to the study and care of the teeth, he did not consider himself a dentist. A good dentist should be a good operator,—should be a master of the mechanical details of his profession; and Magitot loved theory, and did not give to the dental operator the credit we deem him deserving of. Operative dentistry has advanced wonderfully during the past thirty years, and we do not think Magitot kept pace with it. As to prosthesis, he believed that the application of any apparatus to the teeth should be the work of a physician, and that the manufacture of the apparatus should be left to special experts,—i.e., mechanical dentists. We believe that a dental practitioner should be able to do this work himself, or at least to intelligently guide his assistants.

Magitot despised the manual ability and the thousand and one movements of the hand which constitute the expert dentist. He could not understand this "game of patience," as he called it,—the ability to prepare and fill cavities. Let us look for the cause of this feeling in so vast a brain, so quick a spirit, so open to progress of all kinds in other matters. When in his prime, between thirty and fifty years of age, he was received in the medical world, and said that dentists had chosen an undignified profession, — as if there were any difference as to cleanliness between the care of the teeth and that of any other part of the body. It was taken for granted that a specialist of the rectum, or of the nasal cavities, had chosen a more scientific specialty than had the dentist, consequently Magitot preferred the term buccal surgery rather than dentistry proper. Hence it is explicable why he created the science of stomatology, as he understood it, meaning the theoretical study of the mouth and teeth. Stomatology was a religion that he had founded, and he was its high priest.

He was also open, frank, and ready to impart information to physicians in-

terested in teeth, but cold, unamiable, stern, if he had to deal with a dentist not a physician. He contended that no one could properly practise dentistry without a medical education, and insisted that every dentist should have the physician's diploma.

Since 1892 it has been necessary in France to have the medical degree before becoming a D.D.S. One would think that Magitot would have bowed to the decree of the government, but he affected to ignore the D.D.S. He would not place himself at the head of the college, where he would have become the venerated chief, and would have been remembered by Frenchmen, physicians and otherwise, as a benefactor to French odontology much as Tomes is in England. He preferred to seclude himself, and during the seventeen years and more of the existence of the College of Paris he never made it even a flying visit nor acknowledged its existence in any way, though its graduates have done more for the elevation of our art in France than has Magitot with all his science.

Since the formation of the school there has been a constant struggle between the chief and his adherents, and those founders of dental colleges who have consecrated so much time and energy to the one object. To-day the founder of stomatology is dead; the most powerful adversary of the schools is gone, and a new era looms before us, — an era of fusion and peace."

In retrospect, it is interesting to consider the charge that the graduates of the College of Paris contributed more to the advancement of dentistry than did Magitot's science. Obviously, this is pitting one man against a host of others and, although admitting to personal bias, I would submit for your judgment in the matter the following illustrations of Magitot's greatness as evidenced by his dental caries research. Since it is impossible to do justice to the work as a whole, especially pertinent observations are herewith presented in routine form:

GEOGRAPHICAL PATTERN OF DENTAL CARIES

Using the statistics accumulated by the War Office, Magitot developed tables showing exemptions from military service for imperfect dentition for the period 1837-49. These showed marked geographic differences in the exemption rates. In his speculation of this phenomenon he considered the possible roles of geographic, dietary, and economic factors. In his own words:

"We might pass in review and successively refute the other influences which have been named: the altitudes, the geological basins, the climates, the common alimentation, the conditions of wealth or of poverty, etc., and we should arrive at this result, that no one of these circumstances taken by itself, can supply the explanation we seek"²

Because of his anthropological background, it was only natural that he should associate the established caries pattern with the ethnology of France, noting that those persons having primarily a Celtic background had a low caries experience while those of Cymric derivation were the most caries susceptible. Even more remarkable, he clearly recognized the possibility that endemic caries might be attributed to certain waters, referring his readers to a remarkable essay upon this question read by M. Robinet at the Academy of Medicine.

CARIES FREQUENCY

Magitot also prepared tables showing the distribution of dental caries in 10,000 permanent teeth. Using the same methods, comparable data was compiled for 1,000 deciduous cases. In an extension of these researches he presented charts showing the relative frequency of dental caries for each permanent tooth from the time of its eruption to age seventy. One cannot help but wonder why these substantial contributions on the epidemiology of dental caries have been ignored by dental public health workers.

PHYSIOLOGY OF THE DENTINE

In view of the continuing controversy over the existence and possible nature of dental lymph, it is interesting to review Magitot's comments in the matter:

"It has indeed been held by some that this liquid possesses a continuous movement throughout the whole substance of the ivory, but other authors have denied this circulation. As for ourselves, we are much disposed to believe that this liquid, charged with materials of nutrition, bathes the canalicules through their whole extent, and accomplishes the double movement of assimilation and disassimilation, thus setting up a certain exchange, slow indeed but yet aided by the very disposition of the canicules and their multitudinous anastomoses."³

Having used radioactive techniques for the study of the mineral metabolism of the dentine, I believe this to be an adequate statement of our present knowledge of the subject.

PLAQUE ACID PRODUCTION

There is ample evidence that Magitot had an intelligent grasp of the relationship of tooth surface plaques, acid production, and dental caries susceptibility. The following statements bear testimony to this fact:

"Our observations in this examination of the reaction of the saliva, have led us to make a distinction between the reaction observed in the mucous membrane of the tongue and of the cheeks, which is really alkaline, and that of the surface of the teeth and the gums which is frequently acid. We have often found this to be the case in patients free from every abnormal condition of the mouth, or of the general health, and it has appeared to coincide with two principal circumstances; the great viscosity of the saliva and the existence of thick layers of mucus on the teeth . . .

"This acid reaction peculiar to the gingival-labial group in the normal state had been likewise ascertained by M. F. Bou-

det who ascertained moreover that it was especially marked in the neighborhood of the upper incisors, while on the gums of the under jaw the unceasing flow of saliva neutralized this reaction. This circumstance, verified by us, also explains why it is the lower incisors habitually escape caries, while it preferably affects the uppers."⁴

MICRO-ORGANISMS AND ACID PRODUCTION

When Magitot was engaged in his classical researches, the existent knowledge relative to microbial physiology was most incomplete. He did, however, give careful and logical consideration to the part they might play in oral acid production. This is attested by two statements: "As for the vegetable and animal parasites, whose presence we also recognize in the cavities of caries in progress, their development appears to us allied to the general phenomena of buccal fermentation. We know the part which M. Pasteur attributes to certain microphytes and microzoa, in his theory of fermentation, and, whether we consider the phenomena as the result of physiologic acts of these inferior beings, or whether we regard the production of these existences, as we are disposed to think, as a result of these very fermentations, the conditions of the mouth may afford grounds for either hypothesis . . ."⁵

"M. Pasteur has succeeded in discovering a special lactic ferment. It is the levure lactique, fermentum lacticum, in which he recognizes as well as in the alcoholic, acetic, and other ferments, a living organism, which has led him, in the formation of his theory, to liken lactic fermentation to a physiologic phenomenon, accomplished by a microphyte allied to the ferment of beer. Without entering into the still pending discussion of this doctrine of fermentation, we will simply say that if the intervention of a living organism in these transformations is admitted to be necessary, the buccal cavity affords, as has been seen, a variety of vegetable and animal parasites, which

are, if not identical with, at least very closely allied to those which M. Pasteur has described."⁷⁶

EXPERIMENTAL CARIES

Magitot's researches in this area are voluminous. He was steadfast in his belief that dental caries was primarily, if not exclusively, a local phenomenon. He records in detail from his practice case histories the production of caries in animal and human teeth that were attached to prosthetic devices worn by peoples with excessive caries in their natural dentition. He also illustrates dental caries occurring in human teeth used as pivots. In "in vitro" experiments, he showed that sugar solutions, plus animal matter, fermented to produce acids that could cause caries-like lesions in extracted teeth. Sugar solutions that were heated and hermetically sealed, or sugar solutions with antiseptics, were incapable of acid fermentation. Knowing that organic acids were formed by the fermentation of sugars, he tested the actions of such substances as lactic acid, acetic acid, citric acid, and malic acid to cause artificial caries. All of these were shown to possess to varying extents such abilities. One of his most astounding observations concerns itself with the effects of acetic acid on tooth structures. In a concentration of 1 to 100 he noted that it was "without action upon the enamel but vigorously attacked both the cement and the ivory." Explaining this he said: "The fact itself of the alteration undergone by the cement and ivory of the teeth exposed to acetic acid is explained by the property this agent has of dissolving the earthy phosphates, a property singularly favored, according to Deherain, if they are found in the presence of carbonic acid or the carbonates, it is precisely the case with ivory and bone. As to the integrity preserved by the enamel, it is owing perhaps to a smaller proportion of the phosphates, and doubtless also to the minute quantity of fluoride of calcium it contains, or perhaps

to certain combinations of these substances of a nature calculated to resist all alterations."⁷⁷

Any comment that I might make on this statement would be superfluous.

THE ORAL PHYSIOLOGY OF SUGARS

The classical studies of Gustafsson and his co-workers at the Vipeholm Hospital have documented the important relationship between the physical forms of sugars and their caries potential. In discussing the control of dental caries Magitot declares:

"With the child, therefore, as with the adult, it is indicated to moderate or suppress the use of sugar; and here we speak of sugar that dissolves slowly or remains long in the mouth rather than the liquids or sweetened foods whose passage over the teeth is comparatively rapid. We do not proscribe sugar, an important element in our alimentation; we simply protest against its abuse."⁷⁸

PULPAL DIAGNOSIS

It should be remembered that Magitot was a practitioner. One need only to read his chapter on the diagnosis of dental caries to appreciate that he used intelligently not only the mirror and explorer but trans-illumination and electrical induction apparatuses in the location of hard and soft tissue dental pathology. Of special interest are his descriptions of the use of high and low temperatures to locate affected teeth and the value of percussion as a diagnostic procedure. Little or no alteration procedures and conclusions could be reprinted in modern dental texts.

RESTORATIVE MATERIALS

As noted previously, Magitot was criticized by the French dentists of his time as not having an interest in the techniques of restorative dentistry. This is refuted by his published work. He gave preference to gold foil knowing full well it must be annealed if a proper restoration were to be anticipated. When gold

foil could not be used, he preferred silver amalgam as a filling material, noting:

"In the well-established impossibility of filling with gold, the mode of obturation used by us most frequently is with the amalgam of a mixture of silver and tin. This mixture, formulated by us some years ago, after a series of trials, is composed of

Granulated tin	}	equal parts
Pure silver		

melted together and reduced to a fine powder. This powder, mixed with a suitable proportion of mercury, forms a rather hard paste, which is introduced by gentle pressure into every part of a cavity prepared in all respects as in the preceding operation. This forms a very durable filling, taking a polish and not changing its color in a noticeable degree with time, as do the greater part of the amalgams used for this purpose, which by the action of sulphurated hydrogen become of a more or less intense black."

Realizing the impracticability of using amalgam in the anterior teeth, he attempted to develop new restorative materials. Since the usual statement credits the Germans with first using silicates for restorative purposes, the following seem significant:

"We have personally undertaken investigations in a certain direction, that of the hydraulic cements. Thus we have obtained, under certain circumstances and in a practical way, a double silicate of potassa and lime, which has acquired the hardness of stone. We shall make these facts known hereafter."¹⁰

That the bitterness characterizing the lifetime relationship of Magitot and his French dental colleagues had not diminished in intensity at the time of his death in 1897 is attested by his will bequeathing his valuable library to the Academy of Medicine and providing funds for a biennial prize for outstanding contributions in the field of stomatology.

The acrimony existing between Magi-

tot and members of the French dental profession was not shared by the American dentists of the period. This is best illustrated by the resolution passed by The Odontological Society of Chicago at the time of his death and which was given prominence, almost without exception, in the dental journals of the time.

"The Odontological Society of Chicago, recognizing the great services rendered by Magitot to the advancement of dental science, has adopted, and ordered sent to the family of the decedent, and to the dental journals of the United States and France, the following:

Magitot was born in Paris in 1833 and died there during the current year. His first contribution to dental literature was made in 1857 at the age of 24, relating to the structure and development of the human teeth, while the last came from his pen in 1897, just before he died. During these forty years Magitot wrote no less than sixty-five books, essays, pamphlets, etc., dealing exclusively with nearly every phase of dental embryology, histology, biology, pathology, hygiene, etc. No writer of any age has made so many, so varied, and so valuable contributions to dental science as Magitot.

The priceless services rendered by him entitle him to rank as one of the foremost investigators in odontology. He was a member of numerous scientific bodies and societies, whose members sincerely mourn his loss. It may be truly said, that when Magitot passed away from the scenes of human activity, dental science, not of France alone, but of the entire world, lost one of its noblest and greatest minds.

The dental profession of the United States, recognizing and appreciating Magitot's services, keenly mourns and sympathizes with his bereaved family and the profession of France, by reason of his demise."

It should not be construed that Magitot's genius was debated by all his countrymen. He was a founding member of the Anthropological Society and subse-

quently served as its president. He was also a founder of the Societe de Stomatologie and every year was reelected its president. In 1888, his abilities were recognized by election to membership in the Academy of Medicine. His career was climaxed with his being awarded the rank of Chevalier of the Legion of Honor.

Without wishing to provoke controversy, I would like to believe that the basis of Magitot's disagreement with the French dentists was not with the form of dental education but its substance. I am reluctant to believe that his sole concern was to see that dentists had a medical degree prior to embarking on dental study. Rather I would suspect he felt the level and breadth of dental training should be quite comparable with that of the physicians of the day. This is the view that would have the concurrence of most of us herein assembled.

Emile Magitot personifies the greatness and glory of France in an era in which she achieved world leadership in

the biological sciences. It is gratifying that a century which produced a Pasteur in microbiology, a Bernard in physiology, an Ampere in physics, and a Carnot in mathematics brought forth a dental researcher of comparable stature. As an avowed Francophile of many years' standing, I would like to turn your thoughts back a century ago when the subject of this dissertation was actively engaged in the preparation of his doctoral thesis, "The Development and Structure of Teeth." Since time has confirmed his greatness, I would propose a closing toast—Vive La France! Vive Magitot!

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4. *Ibid.*, pp. 89 and 90
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9. *Ibid.*, p. 242
10. *Ibid.*, p. 243

CANADIAN DENTAL ASSOCIATION'S POLICY ON THE FLUORIDATION OF COMMUNAL WATER SUPPLIES

WHEREAS tooth decay by adversely affecting the vast majority of people in Canada, is recognized as one of the most widespread public health problems of our age, and

WHEREAS the fluoridation procedure has received assiduous study under the widest variety of controlled conditions during a period of over thirty years and

WHEREAS such studies reveal that fluoride in the recommended amount of 1 part of fluoride to each 1,000,000 parts of water is safe from any ill-effect and is dramatically effective in reducing tooth decay by approximately two-thirds, and

WHEREAS scientific evidence completely substantiates the fact that the benefits which accrue to children extend into adult life, therefore be it

RESOLVED that the Canadian Dental Association do hereby strongly reiterate its commendation to the Canadian people that communities which have a public water supply, adjust the fluoride content of the water by means of the fluoridation procedure, and for this purpose seek competent dental, medical, and engineering advice.

CDA Meeting Board of Governors,
Banff, Alta., May 30—June 2, 1956.

Dental service in the hospital program*

by H. R. MacLEAN, D.D.S.**

Much has been written during the last five years on the subject of Dental Services in a Hospital program.⁽¹⁻⁵⁾ There are specifically different problems in different localities and many articles have been critical of the professions of Dentistry or Medicine or the hospital organization without offering too much in the way of concrete programs or solutions. There is a difference in the problems of the small community hospital as contrasted with the larger city hospitals with a closed staff. There are particular problems in a teaching hospital connected with a University program where there are responsibilities in the field of instruction for the undergraduate.

Hospital insurance and surgical care plans are being proposed and placed in operation faster than they can be assimilated or administered. Many of these include dental care. Hospitals find themselves in the position where accommodation for the patient falls far short of the demand. We are told that Health Insurance is not far away — again both accommodation and trained professional personnel will be in critically short supply.

Where do dental services fit into this scheme? Too many individuals arrive in hospital with serious illnesses complicated by the presence of gross oral sepsis. Although the theory of focal infection

has lost face under recent investigation, the immediate and remote deleterious effects of dental disease cannot be denied.⁽⁶⁾ Dr. James T. Priestly, two weeks ago in the Gillespie Memorial lecture, asked if new advances sometimes resulted in too much interest being shown in small parts of the patient when someone should consider the patient as a whole. In dentistry for the past several years, we have been trying to impress students with the importance of regarding the oral cavity and its structure as a part of the whole body. Instead of only seeing teeth, to examine, carefully, all of the oral structures — both hard and soft tissues — to know normal and abnormal and to recognize proper development and function as well as disease processes. Dental teachers feel that medical students should know more about oral conditions and that there is a vital necessity for the closest integration of the two professions in this field. In the past, dentistry has failed to demonstrate the value of competent dental examination and diagnosis to the general welfare of hospitalized patients.

Dental internships have always been a problem. This is, at least in part, due to the differences in course planning in the two professions. Dentistry attempts to make its students clinically competent during the undergraduate period, while the medical student gains a considerable portion of his clinical experience and background following graduation and hospital staff appointments are a much sought after prerequisite for him. In the

*Presented before the Medical Staff of the University of Alberta Hospital, Monday, May 7, 1956.

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future dentistry may modify its curriculum to an added year of internship. It would certainly be a desirable step and is being tried at present in some schools in the southern United States. The best surety of producing a dentist who is cognizant of his responsibility in hospital services is to give him the benefit, as an undergraduate, of a properly integrated hospital experience and after graduation have him serve as an intern in an adequately organized and orientated hospital dental service.⁽¹⁰⁾

In dealing with this subject many writers seem to consider only one division of dentistry in relation to the hospital — that is oral surgery. Other important services should be included and merit consideration.

The Medical Staff plan in the publication, "Organization University of Alberta Hospital," May 1, 1953, provides a department of Dentistry with a director. Beyond this there are no specific divisions. "The standard that should prevail in Dental Services is that which provides an adequate, efficient, and economical service according to the hospital's individual needs and comparable to that rendered in its other services."⁽¹¹⁾

The staff should be built on a basis of complete service to the patient and could be divided into the following sections:

Dentistry for children (Paedodontics and Orthodontics)

Restorative Dentistry (Operative and Prosthetic)

Periodontics and Endodontics

Diagnosis

Oral Roentgenology

Oral Pathology

Oral Surgery

The above sections would be integrated with the corresponding sections in other departments, but the organization would be established under the department of dentistry.

If the introduction of all these sections appears too ambitious to initiate in the

beginning — and in fact, difficulty no doubt would be encountered in finding the particular personnel — at least sections in oral diagnosis, oral roentgenology, and dentistry for children could be organized.

Oral diagnosis is the first step in planning an orderly sequence of oral treatment for the patient. It is the result of a clinical examination, laboratory tests where necessary, and a complete oral roentgenographic survey. The data should be compiled in a written report and attached to the patient's record. Treatment is an optional decision, the result of consultation between the staff and patient. Dental Service may be given in part, or be completed in hospital, or advised as a recommended plan to be rendered after the patient has been discharged.

Dentistry for children is probably the most important section of this program. It is here that early observation by a trained specialist can detect deviations from normal in growth, development and function. Corrective and preventative procedures can be properly planned and used. The care of handicapped children, such as cardiacs, diabetics, cerebral palsied, mentally defective, cleft lips and palate, post polio and epileptics require a specially trained and experienced paedodontist to manage the problems peculiar to this group. The new Chairman of Paedodontics coming to this University in September has had seven years' experience in this type of work, including a two-year residency in Children's Memorial Hospital in Chicago.

These programs would furnish excellent teaching material for both graduate and undergraduate students—they would build up a series of recorded histories that furnish valuable material for scientific articles and would in all probability stimulate research projects. In this field of research the cooperation of the dentist and the physician is most important. Research in dentistry in a hospital program is not the task for dentists alone but requires the cooperation of general clinicians, pathologists, bacteriologists and

physiological chemists. Several medical and dental schools are now granting scholarships to dentists for research in oral pathology.

Staff conferences and rounds are a most instructive part of a hospital program, and the dental department should take an active part. Outstanding among these can be in a well organized visible tumor clinic, where representatives of all departments concerned gather in conference.

There are in the writer's opinion two misconceptions on this subject prevalent in the literature and therefore in the professional man's mind:

First, that medicine does not want dental services in hospital programs.

The responsibility for developing and advancing a dental service plan is dentistry's responsibility — if and when the standards of organization are equal to medicine's and the services can be integrated in an approved manner, dentistry's services will be accepted.

Second, that the majority of dentists are anxious to obtain appointments on hospital staffs. Actually, there are very few men who wish to do hospital work. The greatest difficulty will be to find the trained personnel who are willing to devote a portion of their time to this type of service.

Time does not permit a further development of these sections.

The provision in the Hospital Organization of a department places a definite responsibility on the members of that service. The hospital cannot be expected to invite a group of dentists to become staff members — to participate in hospital procedures, and at the same time offer to indoctrinate these men into that field. This should be the responsibility of the department concerned.

The department should keep in mind two objectives:

1. To be familiar with, and to maintain, the existing standards in the hospital.

2. To integrate dental services into hospital procedures without disrupting existing services.

Medicine and Dentistry have much in common. Both professions have identical goals — the promotion of health and the prevention, treatment, and cure of disease. Dentistry needs the medical viewpoint and the benefits of medical knowledge, and there is every reason to believe that medicine can benefit from the dental viewpoint and from dental knowledge.

In some areas a trend has developed in professional education in which medical, dental and pharmaceutical students are given their training in a Health Science Centre. An important part of this assembly is the fact that all are in close association with one another, and the opportunity and facility for discussion of common problems is ever present, even in cafeterias and residences. Many health educators feel this is a most important arrangement. In discussion of future building at this University this plan should merit serious consideration.

The above discussion on dental services in a hospital program has been an attempt to demonstrate several of the problems in which medicine and dentistry should have mutual concern. With both professions working together in an integrated program, a better organized service can be provided for the hospitalized patient.

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Editorial Note—The following two articles are complementary. They appeared originally in the French section of the Journal and aroused considerable interest. The translation now appears for the benefit of the readers of the English section of the Journal.

An in vitro evaluation of the bacteriostatic action of OH-ions produced by the technique of ionophoresis

by GEORGES PELLETIER, D.D.S. and J. GEORGES PERREAULT, D.D.S., M.S.

Bernard (1) has developed a modification of the ionization technique and perfected an apparatus permitting the production of OH-ions by the electrolysis of the physiologic serum contained in the root canal. This OH-ion is said to have properties permitting a debridement and the sterilization of the canal in a much easier way than with the use of the classical techniques.

Dionne (2) reports an important series of clinical cases where the bony regeneration is very rapid.

OBJECT OF THIS STUDY

The present study attempts to evaluate in vitro, the bacteriostatic value of OH-ions and to establish a comparison with the bacteriostatic power of the various drugs used in root canal therapy.

MATERIAL AND METHODS

The bacteria studied are streptococcic and staphylococcic of the non-hemolytic group isolated from infected root canals. Six strains were used in the various tests. Pure cultures only were streaked on blood agar plates.

Filter paper disks impregnated with the drug to be tested were placed on agar plates the surface of which had been totally streaked with the culture.

The period of incubation lasted 18 to 36 hours.

22 agar plates served in the study and the drugs used were:

1. A polyan antibiotic paste containing penicillin, chloromycetin and antihistaminic compounds. (3).

2. A widely used antiseptic, camphorated para-mono-chlorophenol.

3. A physiological saline solution to which 5 drops of phenolphthalein has been added in each 100 cc to ascertain the formation of OH-ions. The ionization of this solution was obtained by an electric current having an intensity of 3 to 4 milliamperes. The voltage was set at 30, so the operator could give a dose of 1 to 3 decicoulombs as quickly as possible in order to reduce the danger of atmospheric contamination of the agar plate.

The electrolysis is done in two derivations. In 12 cases the negative electrode rested close to the positive electrode on the paper disk. These ions had no tendency to move outside the disk. On the other hand, in 10 cases the positive electrode rested on the agar, 25 millimeters away from the negative electrode. In this way the ions OH⁻ had a tendency to diffuse towards the positive.

Three controls permitted to evaluate the effects of the various other factors. In 6 cases we used sterile paper disks without any drug. In 22 cases the disks were soaked in 5% Na OH to demonstrate the activity of the OH-ions bound to a metal. In 12 cases the disks were soaked in the mixture of physiological saline and phenolphthalein but no current was applied.

Furthermore, the drug soaked paper disks were used on two sterile agar plates

to demonstrate the effect of the drugs on the agar in the absence of bacteria.

RESULTS

After the incubation period, the bacteria should grow on all the surface of the agar plate except in the zones of activity of the drugs. A drug is considered active when it inhibits the growth of bacteria more than 3 millimeters outside of the paper disk.

The readings obtained were very constant and the differences so striking that we also tried to establish a quantitative index by using the radius of the sterile zones expressed in millimeter as an index of the activity of the drugs.

At the moment of the reading, it was also possible to see a zone of hemolysis and a milky looking zone probably due to the precipitation of the agar proteins under the caustic action of the drugs. The radii of these two zones were also used as indices of hemolysis and of caustic action respectively.

The zones formed on the sterile agar plates are identical to those formed on the streaked plates. One can then conclude that they represent the action of the drugs.

Sterile paper and intreated sodium chloride did not prevent the growth of the bacteria. They did not have any hemolytic action neither did they produce any milky zone. Thus, the effects noted around the other disks were only those of the OH-ions, of the antibiotics, of the para-monochlorophenol and of Na OH respectively.

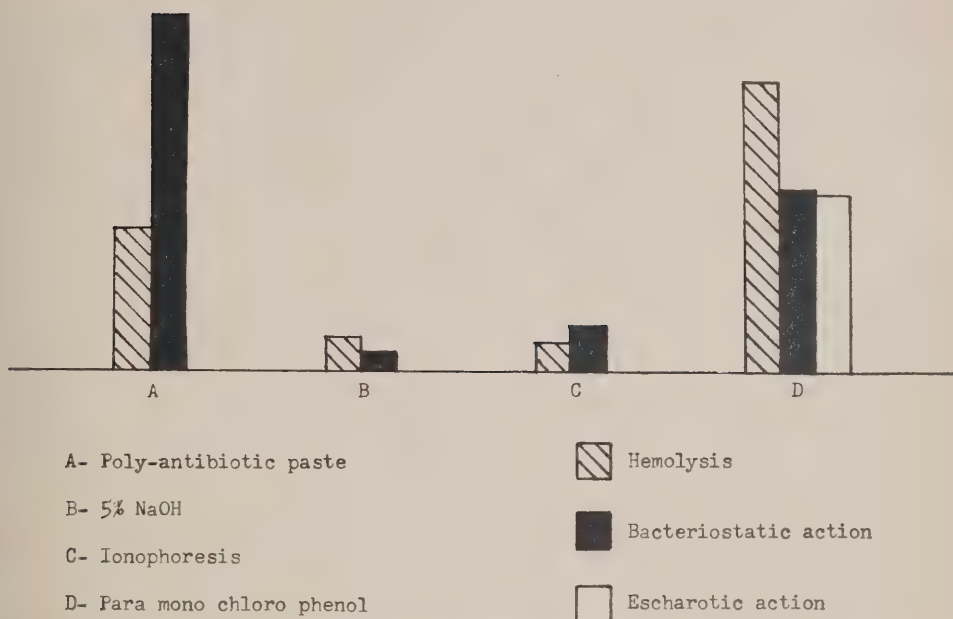
Table I gives the details observed.

The negative cases are the cases where the drugs did not inhibit the growth of the bacteria. The indices of hemolytic action and of bacteriostatic activity are the measure in millimeters of the radius of the zones produced by the drugs on the agar plates. The index of hemolytic activity informs us of the intensity of the destructive action of the drug on the red

TABLE I

		Poly-antibiotic paste	NaOH 5%	Ionophoresis	Para-mono chloro-phenol
Hemolysis	Maximum	15	4	8	25
	Minimum	4	0	0	10
Bacteriostatic action	Negative cases	0	22	17	0
	Maximum	30	5	10	22
	Minimum	8	0	0	4
Ratio Hemolysis—bacteriostatic		42	335	44	158
action		100	100	100	100

The negative cases are the cases where the drugs did not inhibit the growth of the bacteria. The indexes of hemolytic action and of bacteriostatic activity are the measure in millimeters of the radius of the zones produced by the drugs on the agar plates. The index of hemolytic activity informs us of the intensity of the destructive action of the drug on the red blood cells. The index of bacteriostatic activity represents the influence of the drugs on the bacterial growth. The ratio hemolysis-bacteriostatic-action, informs us of the degree of hemolysis produced by each one of the drugs for an arbitrary bacteriostatic action of 100.



This graph shows the spread of the hemolysis of the bacteriostatic activity and of the escharotic action of the various drugs tested.

blood cells. The index of bacteriostatic activity represents the influence of the drugs on the bacterial growth. The ratio hemolysis-bacteriostatic action, informs us of the degree of hemolysis produced by each one of the drugs for an arbitrary bacteriostatic action of 100.

5% Na OH had a very slight bacteriostatic and hemolytic action. It did not produce any milky zone.

The hemolytic action of para-mono-chloro-phenol was the strongest observed. The zone of bacterial inhibition was much smaller than the hemolytic zone about equal to the milky zone.

The polyantibiotic compound had the strongest bacteriostatic action. Its hemolytic action was much less and there was no milky zone.

In the case of the sodium chloride treated with the electric current the position of the electrodes did not seem to influence the results. The milky zone was non exist-

ent and the hemolytic action negligible. The bacteriostatic activity varied with the quantity of current used. It did not inhibit the bacterial growth at 1 decicoulomb but it did in some cases at 2 and 3. However, the zones of bacteriostatic action were never as large as those produced by camphorated para-mono-chloro-phenol or by the polyantibiotic paste.

DISCUSSION

Para-mono-chloro-phenol seems to destroy red blood cells in a zone greater than the zone in which it affects bacterial growth. On the other hand, the milky zone and the zone of bacterial inhibition being equal one might deduce that this drug acts through its escharotic action.

The polyantibiotic paste seems to inhibit bacterial growth far away without destroying red blood cells and without destroying tissue proteins.

In the case of electrolyzed sodium

chloride, it seems that the action was the same "in vitro" as it is "in vivo". During the treatment with the current, the phenolphthalein turned red showing the presence of OH-ions and the electrolytic foam was formed in great quantities on the paper disk just as it is in the root canal. However, in these tests, the OH-ions did show a bacteriostatic action much inferior to that of the drugs routinely used in root canal therapy. These facts take an even greater significance if one considers that the quantity of current was close to the average clinical dose (3 decicoulombs) while in the case of the drugs only a fraction of a drop was used.

These facts do contradict the theories usually brought forward to explain the excellent clinical results obtained with ionophoresis. It seems impossible to admit that a single electrolytic treatment could sterilize a root canal unless the results are due to factors other than the bacteriostatic action of the products of the electrolysis. This confirms the clinical work of Tremblay who, in thirty cases, obtained only a few negative cultures after a single electric treatment (4).

On the other hand, the excellent clinical results proved by numerous radiographs are a piece of evidence which it is impossible to disregard. Therefore, we must admit either that we have to deal with a factor different from the bacteriostatic activity of the OH-ions, which is improbable, or that the sterility of the canal at the time of filling is not necessary to the success of the treatment.

The bony regeneration observed after ionophoresis treatments would have taken place at the apex of canals which were not perfectly sterile at the time of filling.

On the other hand, clinical observation has shown that in these cases, the regeneration is usually more rapid than the case of canals treated with conventional methods, usually with para-mono-chlorophenol, and which are perfectly sterile when they are filled.

These considerations led us to formu-

late the following working hypothesis which although not proven could throw some light on the facts.

When a canal is repeatedly treated with para-mono-chloro-phenol until it is perfectly sterile, all the bacteria would be destroyed by the escharotic action of the drug in the canal as well as in the periapical tissues. However, the periapical tissues would also undergo this escharotic action and the tissue proteins would be destroyed. Furthermore, we have seen that para-mono-chloro-phenol destroys the blood cells in a zone even greater than the zone in which it destroys bacteria and proteins. We would then not only have a destruction of the tissue proteins but also a hemolytic action of some duration. These factors would certainly retard the bony regeneration.

On the other hand, in the canals treated by ionophoresis, the few bacteria left after the mechanical cleaning would be destroyed mostly by the usual means of resistance of the body. The OH-ions having no hemolytic or escharotic action would let the healing take place at a normal rate in opposition to a delayed rate as was the case in the canals treated with camphorated para-mono-chloro-phenol.

What we have taken for an accelerated rate of healing following ionophoresis would in fact be a normal rate of healing and what we considered normal rate after the conventional treatments would really be a delayed rate.

CONCLUSION

1. The passage of an electric current through a solution of physiologic sodium chloride confers to this solution some bacteriostatic properties that it would not possess otherwise.
2. These bacteriostatic properties are always inferior to those of the drugs usually employed in root canal therapy and seem insufficient to sterilize a canal in one treatment.
3. These facts do not deny the clinical

results obtained with ionophoresis but it seems imperative to review our concepts regarding the mode of action of this apparatus.

4. We brought forward a theory which tries to explain the experimental facts as well as the clinical evidence.

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Evaluation of OH-ions in the clinical field

by PAUL DIONNE, B.A., D.D.S., Joliette, Quebec.

The purpose of the preceding article was not to undertake an everlasting controversy, but to try without prejudice to find the exact value (which had already given worthy proofs) of the ionophoresis and also the proper action of the OH-ions. I wish to congratulate the authors for the work they have accomplished because they are keen observers and they have therein revealed many “true facts” about the OH-ions.

However, having different opinions concerning their statement, I am about to call your attention and to add so as to complete their article, and to inform my readers definitely about the unquestionable value of the ionophoresis in comparison with all other previous methods, so called “classical”.

The authors are right in saying: “these conclusions will require new concepts concerning the ionophoresis” because till today the medicine used, such as paramono-chlorophenol and others, being very powerful, are undoubtedly quite bactericidal, but leave the organism in an inactive condition, destroying the red

blood cells in considerable quantity, and leave the tissues further weakened to be confronted with regeneration. Also the apparent results are noticed rather late, when there is a total cure, and apicoectomy cases are by far too frequent in the so called “classical treatments”, whilst the method here used is a sure and rapid cure and the way of proceeding explains the “why” of the astonishing results as it is written in the preceding article.

Ionophoresis as it is now taught in the European Universities was for a long time discussed by eminent medical men and dental surgeons who specialized in bacteriology and microbiology. Once more, as Pierre Fauchard brought to America the first notions of Dentistry, again, we can accept a method which has for at least ten years proven to be of great worth, and which has been improved scientifically by Dr. Pierre Bernard in Paris. In the past I have always abstained from making any comparisons with other methods used, but since others have made some, I feel as though I must make a few observations. At present, about one hun-

dred and thirty dentists work with ionophoresis in the Province of Quebec, and having myself made at least two hundred and ninety-five successful clinical cases, I will only comment on a few opinions upon which I differ, then I will use the writings of Dr. Bernard to give the exact explanations of the three following processes: ionophoresis, the filling of the canal with calcium hydroxide and diadynamic therapy; because we must admit that students and dentists have not been prepared to accept this new method.

The authors are correct in most of their conclusions, but in what I cannot agree with them is that after admitting the clinical efficiency of the ionophoresis technique, they state that "its action remains inferior to the one which uses ordinary medicaments, and seems to be insufficient to sterilize the canal in one treatment". That seems to be contradictory, because all the clinical cases mentioned at the beginning of their article and which seem to have impressed them, have been subjected to only one ionophoresis treatment without regard to the seriousness of the case. However, there are cases which require a second or even a third treatment.

Let us say immediately that the OH-ion has not a bacteriostatic action, as a microbial toxic. We cannot say that it is a medicament, but as Dr. Bernard has explained: "it is the alkaline fragment of all the alkalis (NaOH-HOH-Ca(OH)^2) and thereby there is a chemical organolytic action, that is they dissolve the organic substances (lipoids—glucocides and proteins) and also the microbes when it is sufficiently concentrated and at a temperature higher than 35° ."

In order to find out the bacteriostatic action of the medicaments used on the gelatin substance, they have based their measures on the width of the zones that have remained sterile, and have concluded an index of activities pertaining to the medicaments. The inhibited zone of paper disks cannot give a reliable appreciation in "quantity" of the bacteriostatic action. The clinical bacteriologists have

known for a length of time that we must not interpret "in quantity" the antibiogramms obtained with paper disks impregnated with antibiotics or bactericidal substances. We are content to say for a given concentration whether or not there exists an inhibited zone of the organism concerned. Furthermore it is well known by all who use paper disks to test sterility that penicillin and chloromycetin diffuse easily in the gelatin substance and give extensive zones of inhibition in comparison with other antibiotics. As for the zone of hemolysis it is far from being proven that the eschar zone "in vitro" corresponds to the eschar "in vivo". But considering that study in its whole, I refer to the writings of Dr. Bernard who says: "in the gelatin substances when there is only the sodium NaOH , this sodium begins to destroy the organic structure of the gelatin and the few microbes that come in direct contact, but at the same time the sodium disappears to leave a stable organic salt of sodium and HOH (water)". This action is therefore well localized and there is a chemical action of contact and no bacterio-toxic action at distance whatsoever.

Besides, here is what is said in the Textbook of Bacteriology, (Jordan & Burrows) 1941 edition, in the Chapter on the Effects of Physical and Chemical Agent on Bacteria, page 65: "The disinfectant action of alkalis such as sodium hydroxide is likewise proportional to the degree of dissociation. The germicidal activity of hydroxides of the alkaline earths is, however, greater than can be accounted for on the basis of dissociation, for the metallic ion is often toxic in itself. Both acids and alkalis in too low concentration to kill bacteria rapidly often enhance the activity of other disinfecting agents. For example, the germicidal activity of many salts is greater in the presence of acid or alkalis and, as noted above, bacteria are killed much more rapidly by heat in the presence of dilute acid or alkali than at neutrality".

To continue with Dr. Bernard: "The

electrolysis produces OH-ions (the very same as that of the sodium) and which as they combine with the organic substances of the gelatin, those ions are renewed by electrolysis. Besides, they move away from the negative pole by "phoresis". That is the reason why the action has far more effect with ionophoresis than with the sodium alone, even though the same element OH is concerned."

"May I call your attention to the fact that the red coloration of the phenolphthalein caused by the OH-ions in time disappears progressively as the OH-ions combine chemically with the organic substances. In these conditions what happens in the tooth? We have taken away all the organic content from the accessible and large parts of the canals by mechanical means, and our chemical processes with sodium, and still better with sodium peroxide, destroy the organic left-overs which might have remained on the walls. This cleaning previous to the ionophoresis, is indispensable, otherwise the OH-ions would be absorbed and annihilated by the abundant organic content and there would be required a quantity of 20 to 30 decicoulombs to destroy the organic substance in the canal. That is what the German Authors do, they who do not previously clean the canal widely open, and they have written: "the quantity of 2 to 6 decicoulombs used by Bernard are very insufficient". They are correct since they require the ionophoresis to do all the cleansing and to destroy the abundant organic substances which it is so easy to get rid of with sodium peroxide. To those German Authors Dr. Bernard says this: "in those conditions their methods of proceeding are necessarily tedious, and we cannot appreciate the quantity of organic substance to be destroyed. We never know which quantity of decicoulombs we must apply and we risk to give either too little or too much and seldom the exact dose." But Dr. Bernard says: "clean well the canal of its organic debris and there will remain to be destroyed by ionophoresis only the organic substance

and the bacteria in the inaccessible and secondary portions of the canals. The quantity of this substance is therefore reduced to as little as possible, and then, the prescribed quantity of 2 to 6 decicoulombs are sufficient to dissolve the remaining organic substance".

"Here is a convincing experiment: if we mechanically clean the tooth without cleaning it chemically with sodium peroxide, and if we place the electrode far in the canal, ionophoresis will only disinfect the portion below the extremity of the electrode. As for the wide canals located above the extremity they will hardly be sterilized by foam, if there is any, or not sterilized at all, and if we fill the apical area of the canal and if this is followed by the introduction of a sterile paper point in the rest of the canal, this paper point will give a positive test. And moreover, it may also have a characteristic odor of persisting infection, even though the ramifications and the inaccessible part of the canal, at the apex, will be perfectly sterilized, and the treated apical zone will cure perfectly." (This is an answer to the authors who have spoken of the experiments by Tremblay).

Besides, we can read in the Canadian Dental Journal, November 1954, page 619 among the advantages and disadvantages of the use of antibiotics in Endodontics, by Bender and Seltzer: "The antibacterial activity of the antibiotics is transferred to the culture broth by means of paper point in taking the culture. Inasmuch as inactivators have not been developed for certain antibiotics which are used in Endodontics the validity of the negative bacteriological culture becomes questionable. Small traces of antibiotics, particularly when used in combinations, may produce a growth inhibition in the cultural tube. Negative cultures obtained following antibiotic treatment must be regarded as questionable in 13 per cent of the cases."

From G. L. Slack: Bacteriology of Infected Root Canals and in Vitro Penicillin Sensitivity (Year Book of Dentistry, page 37, 1955 edition): "From the 514 root

canals, pure cultures were obtained in 405 cases; two organisms were present in 95 cultures and three organisms in 14. Alpha and gamma streptococci were the organisms most often encountered".

And what about the antibiotic-resistant organisms produced in the dental region? "It is predicted that root canal infections will become more and more stubborn to antibiotic treatment." (S. Behrman, New York State Dental Journal, Sept., 1955).

The OH-ion is not, so as to say, bacteriostatic but, by ionophoresis it cleans the inaccessible portion of the canal where precisely the other medicaments, *however bacteriostatic they may be*, can penetrate only with difficulty or not at all.

"I have once made this statement (Bernard): the process to kill the microbe matters little, the essential is to reach it, and once it is reached it is not necessary to have an extraordinary bactericidal agent; a simple chemical action as that of OH-ion is sufficient."

"This first conception is quite different from the so-called "classical one" which consisted in the belief that the morbid state of an infected tooth was due to a particular resistance of microbes against which it is necessary to find an extraordinary antiseptic or antibiotic, whilst the morbid state is simply due to the cryptic situation of the microbes which are protected against the bacteriocidal agents in the anfractures and apical ramifications of the tooth. Ionophoresis has simply the advantage of carrying into the inaccessible regions the OH-ions which are a mild antiseptic."

"In the apical area, continues Dr. Bernard, the OH-ion has really not caused any bactericidal action. It would require a considerably great quantity and would cause caustic burns whenever the heavy dose would come into contact with the healthy tissues around the granuloma, and this concerns the second conception which must be acknowledged. As it is said in medicine: the microbe is nothing. The defences of the organism are essential. Whereby, if in the tooth there is such a

place in which the organism has not been able to display a defensive action, it is not the same in the apical area in which such defences are effective. Unfortunately, almost every medicament in use provokes an inhibition of those defences and sets in a lethargic state the tissues in which the microbes live more or less comfortably and provide a chronic infection. It is on account of this inhibition of the defences that the tissues take so long to be reabsorbed and to regenerate.

The OH-ions have no toxic action upon the tissues and because they are lightly concentrated in the periapical area when they diffuse they simply cause a rise of pH to 8 or 9 that is towards an alkalinity, whilst the infected tissues have always a pH, inferior to 7, and precisely the alkalinity about 9 is unfavorable for the evolution of microbes but favorable for the action of the leucocytes, and absolutely necessary for the process of the regeneration of the bone. What is particularly harmful in usual medicaments is that they keep a pH inferior to 7 that which hinders regeneration."

Dr. Bernard stresses on the fact that the OH-ion starts off regeneration by raising the alkalinity to 9; and this alkalinity is maintained by the use of ocalex. (Calcium hydroxide as a paste to fill the canals).

Finally, Diadynamic which day by day appears more important, reduces the time of regeneration because it causes a stimulus to debilitated tissues in the cases of chronic infection.

To summarize, the hypothesis of the authors of the preceding article is correct, and what we have always called a normal cure (within 6 to 18 months to see the tissue of the bone regenerate) was in fact nothing else but a slow healing.

Ionophoresis of OH causes a normal healing within 2 or 3 months, that is to say more rapid, providing no medicaments used in the canal as a filling disturb the cure. At last, diadynamic gives a cure which is still more rapid, that is within 4 weeks.

ABSTRACTS



Reaction of odontoblasts to medicaments placed in cavity preparations in rat incisors

by J. GEORGES PERREAULT, D.D.S., M.S., MAURY MASSLER, D.D.S., M.S., and ISAAC SCHOUR, D.D.S., Ph.D.

The Journal of the American Dental Association, May, 1956.

In spite of the fact that silver nitrate and phenol have been and are being used in thousands of teeth in an attempt to sterilize the dentine, their effect on the dental pulp has been studied only infrequently by histologic methods. The histologic effect on the pulp of other agents such as eugenol, thymol, alcohol, chloroform and benzalkonium chloride has never been studied on a comparative basis under controlled conditions.

This investigation was designed to study the relative effects on the pulp of a number of sterilizing and chemical agents commonly used in dentistry, by applying these medicaments to cavities prepared in the incisors of 188 rats for a period of ten minutes.

The results show that:

1. The deeper the cavity preparation, the greater the effects of the operative trauma and the medicaments on the odontoblasts and the pulp. The calcio-traumatic reaction, which indicates acute injury to the odontoblasts at the time of operation, becomes significantly accentuated when the cavity floor reaches a critical level approximately 50 microns from the pulp. Severe injury to the odontoblasts as evidenced by dentine hypoplasia resulted when the floor of the cav-

ity came within 25 microns from the pulp.

2. Eugenol, thymol, eucalyptol, beechwood creosote, chloroform, acrylic monomer, hydrogen peroxide 4 per cent, and benzalkonium chloride 1:1,000 produced little or no additional injury to the odontoblasts or the pulp when these were applied for ten minutes or less, even in deep cavity preparations. In this group, differences in odontoblastic reactions were determined by differences in cavity depth rather than by different medicaments.

3. Alcohol 95 per cent, sodium fluoride 4 per cent and sodium silicofluoride 0.9 per cent caused a slight injury to the odontoblasts when applied under the same conditions, in deep cavity preparations. No effects were observed in shallow cavity preparations. None of these substances penetrated to or injured the pulp under the odontoblasts even when applied in very deep cavities.

4. Phenol and phenol compound produced a moderately acute reaction when applied for ten minutes to medium cavities and a more severe injury to the odontoblasts in very deep cavities. However, phenol did not penetrate into nor

produce a destructive reaction in the pulp itself.

5. The action of most of the medicaments here investigated was more severe (to different degrees) when they were sealed into the cavities for two or three days. Even after such prolonged contact with the freshly cut protoplasmic processes of the odontoblasts, however, these medicaments did not produce destructive effects on the pulp. Prolonged contact interfered only with odontoblastic functions.

6. Since the dentine of the rat incisor is more permeable than human dentine and since the sensitivity of the rapidly growing dentine-forming cells far exceeds the sensitivity of the same type of cells in the human pulp, it is felt that the application of these medicaments and chemical agents to freshly cut human dentine for ten minutes or less should produce no significant injury to the pulp or its cells even in deep cavity preparations.

7. Orthophosphoric acid and silver nitrate produced destructive reactions in the

pulp. Orthophosphoric acid produced hypoplasia in medium cavities, aplasia in deep cavities and destruction of the pulp (inflammation and abscess formation) under very deep cavities. Silver nitrate produced hypoplasia in even shallow cavities and complete death of cells in pulpal necrosis under medium and deep cavities.

8. In view of the destructive action of silver nitrate on the pulp, its use in clinical dentistry for the sterilization of dentine in deep carious lesions should be questioned.

There is an obvious need for a simple, rapid and inexpensive method for the bio-assay of the effects on the dental pulp of the many new and old filling materials and drugs before they are recommended for use in human teeth. The results of this and previous investigations indicate that this need can be met adequately by cavity preparations made in the rat incisor for the assessment of effects on the young growing pulp and in the rat molar for the effects on the older (adult) pulp.

Effect of partial denture design on bilateral force distribution

by ANTHONY K. KAIRES, Commander (DC) USN.

The Journal of Prosthetic Dentistry, May 1956.

Success or failure in a partial denture service is dependent upon many uncertain factors, which if known, would enhance the chances for greater success, and to the realization that the requirements of a partial denture have been fulfilled, namely, to preserve, restore, and maintain the remaining teeth and related oral structures well within the limits of physiologic tolerance.

The effect of partial denture design on bilated force distribution was studied in relation to the movement of the abut-

ment teeth and related simulated resilient tissues in which the extensive stress distribution principle was employed.

Based on the findings of this study, it can be concluded that: (1) A ring clasp, reinforced with a buccal arm, reduces its flexibility. (2) A rigid lingual bar is more desirable than a flexible lingual bar in withstanding horizontal stresses. (3) Maximum coverage of denture-bearing areas with denture bases is of the utmost importance in withstanding both vertical and horizontal stresses.

The Management of periodontal diseases

by LOWELL N. PETERSON, D.D.S., F.A.C.D., F.I.C.D., San Francisco.

The Journal of the California State Dental Association and the Nevada State Dental Society, March-April 1956.

Periodontal disease is so prevalent that the general practitioner should attempt to treat the conditions he sees. Most cases will respond to accepted methods of therapy.

A rational approach to periodontal therapy then would be:

A thorough dental, periodontal and oral examination supplemented with good dental x-rays as a minimum requirement toward a tentative diagnosis.

Elimination or control of local factors (irritational, anatomical or functional) by establishing good habits of oral hygiene and correction of local factors by operative means.

Restoration of the occlusion by selective

spot-grinding first and then by restorations, replacements, splints and any other means.

The dietary habits should be studied and nutritional advice given as an aid to complete recovery and a safeguard to prevent recurrence.

If adequate control or complete recovery has not been attained by this time, constitutional factors may be present. Many times the nutritional counseling will reveal allergies, endocrine dysfunctions or specific conditions or symptoms. At this point competent medical advice should be sought with a brief report to the physician as to your findings, diagnosis, results of treatment and prognosis.

A simplified procedure for fabricating a temporary removable acrylic bite plate

by DAVID G. STAHL, A.B., D.M.D., Boston, Mass.

The Journal of Periodontology, April 1956.

The use of a bite plate as a temporary splint in cases of bruxism, to minimize adverse effects of tongue habits, and for other purposes when removable protection for the teeth is desired is a well-accepted procedure.

Normally, the bite plate for bruxism is made to fit the upper dentition, with the lower teeth interdigitating on the exposed surface of the plate. For such a purpose, an alginate impression of the upper jaw is poured in a hard stone. All deep undercut areas on the model are filled with asbestos-clay modeling compound, and the model painted with sep-

arating solution to facilitate removing the finished bite plate. The model is then placed on a pedestal beneath an hydraulic press, and a sheet of eighth-inch base-plate material positioned on the model. By holding an inverted heating element one inch above the plastic sheet, the material is warmed until it softens and begins to fold easily around the model. With a blunt instrument, depress the softened material into the vault area and then apply pressure with the plunger of the press.

Within two or three minutes, the plastic material is fully cooled and per-

manently swaged to the outline of the model. It may then be trimmed so that one-sixteenth to one-eighth inch of the plastic material projects onto the labial and buccal surfaces of the teeth. Only minimal finishing is necessary, as the material has a smooth surface and is quite transparent, providing it has not been scorched by overheating.

At the patient's next visit, insert the appliance and check it for fit. Very little, if any, adjustment is normally required. A mix of self-curing acrylic resin is then prepared, the exposed surface of the plate painted with monomer, and a thin

roll of cold-cure placed on the exposed occlusal surfaces. The added material is covered with tinfoil or cellophane to prevent occluding the undercut areas of the opposing dentition, and the patient instructed to close in centric relation, maintaining this position until the added plastic material has hardened. The appliance is then removed and any remaining finishing performed, so that free lateral movements will be possible.

Almost uniformly, patients have found no objection to the plate described here, either as to aesthetics or to comfort. Its simplicity and adaptability should recommend it for more general use.

Objectives of a course in public health dentistry

by ALLEN O. GRUEBBEL, D.D.S., M.P.H., Kansas City
Journal of Dental Education, March 1956.

The objectives of a course in public health for undergraduate dental students are as follows:

To provide a general knowledge of public health practice in order that a dentist can serve intelligently as a member of the health team in his community along with the physician and other health professions.

The dental graduate should understand the technical terms commonly used in public health and should be familiar with the health problems with which most communities are faced. We are prone to criticize physicians for not being more familiar with dental health problems. Many dentists can be similarly criticized for not being familiar with the general health problems of their communities. Training in this area will help the dental graduate to assume leadership as a citizen and as a member of one of the health professions.

To provide more specific knowledge of the occurrence, prevention and control

of dental disease from the public health point of view. The dental graduate should know something of the incidence and prevalence of dental conditions in his community. He should be familiar with the measuring devices commonly used to determine incidence and prevalence, and he should be aware of the value and limitations of such measuring devices. He should also know how effective the various procedures are that are recommended as dental preventive measures.

To familiarize the dental student with the aims and methods in health education. He should know how health education can be used in private practice and in community activities.

He should know what role the dental society can play in dental health education, and he should understand how certain media in health education can be used most effectively.

To acquaint the dental student with the opportunities for a career in public health service.

Clinical Evaluation of Pulpotomy in Young Adults

by HAROLD R. ENGLANDER, D.D.S., M.P.H., MAURY MASSIER, D.D.S., M.S., and
WILLIAM J. CARTER, D.D.S., M.S.

Journal of Dentistry for Children, First Quarter, 1956.

Pulpotomies were performed on 228 permanent teeth condemned to extraction because of large carious pulp exposures. The pulps were first sedated with zinc oxide and eugenol for 1 to 7 days prior to operation. The degenerated portion of the pulp was amputated until healthy pulp tissue was reached as evidenced by frank bleeding. A thin blood clot was allowed to form. This was covered with a calcium salt, an antibiotic or zinc oxide and eugenol and sealed with a fast setting zinc oxide and eugenol cement. Teeth were extracted 4 days to 9 months later and prepared for histologic study. From the clinical point of view, 89%

were classified as successful, i.e., completely asymptomatic or with slight transient thermal sensitivity. Failures were considered in those cases where severe pain was present. Antibiotics resulted in 20% failures. Calcium salts produced 6% failures. There were no failures under zinc oxide and eugenol. Although the period of post-operative observation was relatively short, this study indicates that sedation of the pulp and sterilization of dentine prior to amputation, and a careful operative technique are probably more important to clinical success than the type of calcium salt or antibiotic employed to cover the amputated pulp.

Blood Loss in Oral Surgery

by RICHARD L. JOHNSON

Journal of Dental Research, April 1956.

Quantitative determination of blood losses sustained in oral surgery in a series of 175 patients representing 8 oral surgeons showed losses ranging from 35 to 912 ml., with an average loss of 223 ml. with extraction of 18 teeth and alveolotomy in an operative procedure lasting 30 minutes.

The extent of haemorrhage in oral surgery has been vastly underestimated. The blood loss associated with extraction of teeth and alveolotomy in the average patient compares with blood losses encountered in major surgery. Some correlation between blood loss and age and sex of the patient might have been expected but this correlation was not demonstrated in this series.

Time and blood loss are direct surgical antagonists. The longer the operating time, the greater the blood loss. These blood losses in oral surgery may be predicted to some extent. A thorough medical history and preoperative complete blood count on all patients, as well as the condition of the tissues of the mouth, afford valuable information. In average patients, blood losses may be anticipated in conformity with individual operating time and technique. Although the rate of haemorrhage in oral surgery seems to have a less profound immediate physiologic effect than in other types of surgery, any appreciable reduction of blood volume can be just as disastrous to the patient.

ETHICS

Obligations to the Profession at Large. Sec. VI

(a) Every member of the dental profession is bound as such to maintain the honour and integrity of the profession. This means that the conduct of a member of the profession must be above reproach at all times. He must conduct himself as a gentleman of honour and dignity in the office, at home and in all social contacts. This applies not only to contacts with professional confreres and that portion of the public that make up his professional practice but also with all individuals with whom he comes in contact at any and all times.

Any conduct which can be criticized in any way either professionally or socially will bring discredit on both this individual and the profession at large.

On the professional side, every dentist should do the best dentistry he is capable of doing at all times in order to keep up the standards of the profession and give the public what they are expecting in the way of good service and treatment, all of which aids in making and improving good public relations.

Efforts should be made to keep charges to the patients within their ability to pay, trying to give the best service for which they can afford to pay.

(b) Every dentist should give his wholehearted support to the advancement of his profession through his dental societies, which would include local, provincial and national bodies.

This will require his taking office and acting on various committees of these societies when requested to do so. It will require attendance at the meetings, taking part in the business as well as the clinical sessions.

Like everything else, the more each member of the profession puts into a society the more he will get out of it.

The professional man should write for the Journal of the Association and if requested should take part in the program at the Association meetings.

All members of the profession should show their appreciation of what has been passed to them by teachers and clinicians, of the knowledge and art of the profession by in turn giving to the profession advances which they acquire through study and research, without thought of financial gain. They should make special efforts to acquire some knowledge which can be passed along to the profession in return for the vast amount of knowledge which has been available to them.

In order to fulfil his obligation to the profession, each member should behave and practise in such a manner as to always reflect credit on the profession at large.

The question of profit to the individual from ideas or inventions is one which could be given serious consideration by the members because at present different opinions are held by various members of the profession.

As now laid down in the accepted Code, the professional man should derive no personal profit in a financial sense whatever from his efforts which result in an appliance or idea even though of enormous benefit to the profession. This would seem to apply regardless of the time, effort and possible expense which has been put into these efforts. The idea behind this seems to be that the public

through the members of the profession should not be deprived of any benefits which would otherwise be available to them. If a professional man spent a few years of his spare time and produced an idea or an invention which revolutionized the manufacture of cars or some other industry, he would not be criticized by the profession if he made a large sum of money, nor would they expect him to turn this over to the profession at large. On the other hand, if he had spent the same time developing an instrument or appliance for use by the profession he

would be criticized if he derived any financial return. The men who had spent the same spare time fishing, hunting, playing golf, curling and generally having a wonderful time would be, in many cases, the loudest in their condemnation.

Many men now seem to think that there should be no ethical objections providing the royalty received did not unduly add to the final cost to the public.

There are a great many angles to this question and some thought could be given to the subject in order to determine whether we are entirely on the track.

Dr. Benjamin Spock Heads National Organization for Fluoridation

Formation of a new national committee in support of water fluoridation — the Committee to Protect Our Children's Teeth, Inc. — was announced recently in New York. Heading the distinguished list of dental, medical and civic leaders on the committee is Dr. Benjamin Spock, of Cleveland, one of the nation's best known paediatricians. Dr. Spock said that the committee was formed to spread facts and correct misinformation on water fluoridation. Its first campaign will be concentrated on New York City where fluoridation has been repeatedly recommended by the Board of Health. Dr. Spock said that persons in many parts of the nation had joined the committee because "New York's decision will be pivotal and perhaps decisive in advancing the measure across the country." He pointed out that fluoridation is now in operation in 24 of the nation's largest cities, including Chicago, Philadelphia, Milwaukee, Baltimore, St. Louis and Washington, D.C. Dr. Spock said that the State Charities' Aid Association, 105 East 22nd Street, New York, N.Y., is accepting tax-deductible contributions toward a \$100,000 budget for an intensive education campaign.

Dr. Spock, who is visiting professor of child development at Western Reserve University, called water fluoridation "the safest, most effective and cheapest way to protect children's teeth," and added that "up to ten years of successful use of the procedure by more than 1,100 communities across our country have proved its efficiency and absolute safety." Dr. Spock said that fluoridation is not yet well enough understood by people whose children would benefit and that "what we do or fail to do in imparting information and winning understanding affects the future of boys and girls now being born. Public ignorance about these facts is serious. Dental health affects nutrition. It profoundly influences many aspects of physical and mental health." Dr. Spock said that the fears of fluoridation although groundless may assume epidemic proportions. "No valid evidence has been offered," he said, "to support these claims (of dangerous effects). And yet in most cities where the issue is joined, the scare campaigns delay acceptance of what is considered the greatest public health advance in the past 25 years."

EDITORIAL

Board of Governors—1956

Another Board of Governors' Meeting has ended. The deliberations of the Board, extending over a period of four days at the Banff Springs Hotel, have again produced significant policy developments and progressive achievements. Some twenty-one committees reported on their stewardship in their respective areas of endeavour and the president and secretary, as usual, had cogent observations upon the contemporary achievements and future development of the Canadian dental profession.

To attempt to document the product of the deliberations of the Board would be a monumental task. The Transactions will contain the various reports and statements of the action taken on them, and these proceedings will be distributed to the members in due course.

Probably the most important document to emanate from the meeting was the Policy Statement on Health Insurance. This statement, which contains some twenty-three points of discussion, will be published shortly. General observations were made and especial consideration was given to administration, health education, research, and treatment services. The Canadian dental profession will co-operate with authorities in the formulation of plans designed to improve dental health.

The recent legal interpretations of various provincial Hospital Acts caused great concern. At present, the provision of dental services in most hospitals does not conform with existing Hospital Acts. The following resolution based on the absolute necessity of providing dental

services in hospitals was approved:

"Resolved that the Provincial Ministers of Health be respectfully requested that if such conditions (as above) exist within their province, to take immediate steps to remedy the situation, if necessary by amending the Hospital Act and/or Regulations to effect the following:

1. The hospital authorities may appoint a dental staff consisting of dentists duly licensed under the provisions of the Provincial Dental Act.
2. A member of the dental staff may admit a patient to out-patient department of a hospital whenever in his opinion the dental treatment may be more effectively and safely rendered in hospital.
3. A member of the dental staff may admit and discharge a patient to an in-patient service in conjunction with a physician.
4. A physician attending any patient in hospital may request a member of the dental staff to render such dental treatment as may be required.
5. A member of the dental staff who has admitted a patient under sections 2 or 3, or who is requested under section 4 to render dental treatment, shall thereupon be entitled to render dental care to the patient in hospital, and within the scope of his qualifications as a dental practitioner shall be entitled to the same rights within the hospital and shall be subject to the same obligations regarding his relationship to the patient, hospital records, and procedures, as those which are prescribed in the Hospital Act and/or Regulations with respect to a member of the medical staff.

THE BOARD OF GOVERNORS IN ANNUAL SESSION
AT THE BANFF SPRINGS HOTEL, MAY 1956.

FIGURE 1 — A view of
the Board in Session.



FIGURE 2 — Dr. Don W. Gullett, Secretary; Dr. Reyburn R. McIntyre, President and Chairman; Dr. Kenneth M. Johnson, President-Elect and Vice Chairman.



FIGURE 3 — A view of
the Board in Session.

The Fluoridation procedure was again acclaimed and a strong resolution was adopted which will be found elsewhere in this issue. The Research Committee was asked to bring forward a statement on the "Effects of Chewing Gum on Dental Caries and Oral Hygiene." This committee reviewed the scientific studies and stated that the paucity of research in this field precludes a conclusive evaluation of the effects of chewing gum on oral health and any decision must await comprehensive investigations.

The Board approved as well the recommendation of the Council on Dental

Education accrediting all five Canadian dental schools. During the meeting it was announced that the American Dental Association's Council on Dental Education has added the five Canadian schools to its listing of Accredited Dental Schools. This is a significant achievement.

Civil Defence also engaged the attention of the Board and a resolution enabling the Association to take immediate action to have a full-time dental representative added to the Staff of the Federal Administrator of Civil Defence was approved. This appointment would enable the development of an adequate plan to

train dentists to take an active part in Civil Defence on the National, Provincial and Local levels, including the teaching of certain aspects of Civil Defence to undergraduates in the Canadian dental schools.

The Board also encouraged continuing efforts to secure tax relief from payments made to an authorized pension plan and for costs involved in attending approved post-graduate courses.

Effort will be made to secure additional financial assistance for the training of dental teachers in order to supplement the very valuable studentships which now exist. A similar effort will be made to prepare suitable material for utilization in recruiting more and the better candidates for the dental profession in view of the increased enrolment which will be necessary because of the impending augmentation of teaching facilities. There is to be no diminution of effort in attempting to secure additional facilities for training dentists and auxiliary personnel because of the rapidly growing population of Canada.

The Board gave recognition to the Canadian Society of Dentistry for Children and this society, therefore, is now a section of the C.D.A. and will report its efforts and accomplishments on an annual basis. This action will undoubtedly stimulate membership beyond the borders of Ontario.

The work of the Association is growing almost daily and this fact was recognized in that the Executive was increased from five to seven. The two additional members for this year are "co-opt" members until such time as the By-Laws may be accordingly amended. This change will permit greater continuity of effort.

The Board of Governors recommended the establishment of an Omnibus Trust Fund in order to receive grants for Association activities without impairing the

financial status of the donor, upon the liquidation of certain estates. Some legal formalities exist which can best be dealt with under such a Fund.

A review of the specialist situation in Canada was sought because of the variety of regulations existing in the various provinces. While the C.D.A. has no jurisdictional competence in such matters, it is hoped that the various provincial legal bodies would look to the Committee on Specialists and Specialization in an attempt to achieve uniformity among the ten Canadian provinces.

Local societies were encouraged to include a consideration of the subject of Ethics in their yearly programmes because high standards of moral conduct are essential to the maintenance and enrichment of the professional status of dentistry.

A sound policy statement on Dental Public Health was developed and approved and this, too, will be published shortly.

The new library catalogue which will make its appearance in due course, will list the books written in French in a special section in order to facilitate the employment of the list by those who wish to utilize the texts.

The financial status of the Association is the healthiest it has ever been, but the reserve is still woefully low. The establishment of an adequate Reserve Fund for the Canadian Dental Association was placed in a position of paramount importance.

The Board Meeting was ably conducted by the president, Dr. R. R. McIntyre, and the closing session saw the election of Dr. Kenneth M. Johnson of Winnipeg as the incoming president and Dr. A. Gerald Racey, of Montreal, as President-elect.

It is recommended that each member of the Canadian Dental Association peruse, most carefully, the contents of the Transactions when they are distributed. These deliberations are of the utmost importance to the dentists of Canada.

Book Review

A Textbook of Endodontology. By Edgar D. Coolidge, B.S., M.S., D.D.S., LL.D. (Hon. Loyola) and Robert G. Kesel, D.D.S., M.S., Second Edition. Published by: The MacMillan Co. of Canada Ltd. Pages: 366. Price: \$7.50.

This thoroughly revised edition on endodontics is a most welcome addition to the dental literature.

The authors place the emphasis where it should be — on the proper diagnosis and the mechanical cleansing of the root canal. The merits of all the latest drugs are discussed. Technique is adequately presented in an orderly fashion aided by many good illustrations and drawings.

In the chapter on dental caries we read — "Dental caries is the principal reason for the practice of endodontics. If tooth decay could be

eliminated or better controlled there would be few diseased pulps and little need for root canal filling."

With the widespread use of high speed and full coverage preparations in dentistry, a section devoted to the dangers of high speed, pulpal irritation from poor temporary restorations, and methods of cementation to avoid pulp death would be most appropriate in such a text.

The endodontic treatment of deciduous teeth has been completely omitted. This is a definite shortcoming.

This is a worthwhile and most informative text which should be read by all those interested in the subject of endodontics, because of its orderly and up-to-date presentation of the subject.

M. E. Lucyk

The Library

The Library of the Association consists of practically all the books related to dentistry which have been published during the last ten years. A considerable number of volumes published earlier are also available.

The Library has been made possible through the generosity of interested members of the Association. All monies received are used for the purchase of books. The Association bears the cost of administration.

For the benefit of members and all others interested, the library is open daily from 9.00 a.m. to 5.00 p.m. except Saturdays and Sundays. All dental periodicals are available.

Books may be borrowed by the membership by writing: Librarian, Canadian Dental Association, 234 St. George St., Toronto.

Additions

BECKETT, J. S., and BERMAN, P.: Sterilization and disinfection. 1955.

BROCHERE, F.: Les problemes de la pratique dentaire quotidienne. 1955. 556 pp. illus.

COOLIDGE, E. D., and KESEL, R. G.: A textbook of endodontology. 2nd ed. 1956. 366 pp. illus.

CRILE, G., Jr.: Cancer and common sense. 1955. 118 pp. illus.

DAVIS, M. M.: Medical care for tomorrow. 1955. 497 pp.

GRAHNEN, H.: Hypodontia in the permanent dentition. 1956. 100 pp.

HANLON, J. J.: Principles of public health administration. 2nd ed. 1955. 693 pp.

KARSNER, H. T.: Human pathology. 8th ed. 1955. 960 pp. illus.

KELSTEN, L. B.: Paedodontics for the general practitioner; a textbook for oral paediatrics. 1956. 396 pp. illus.

KIRK, P. H., and STERNBERG, E. D.: Doctors' offices and clinics. 1955. 218 pp. illus.

LONG, R. H.: The physician and the law. 1955. 284 pp.

MULLER, L.: La pratique de la telerradiographie en orthodontie. 1954. 79 pp. illus.

SHERMAN, H. V.: Chemistry of food and nutrition. 8th ed. 1952. 721 pp. illus.

U.S. NAVAL DENTAL SCHOOL.: Color atlas of oral pathology. 1956. 188 pp. illus.

UNIVERSIDADE DO BRASIL.: Anais de Faculdade Nacional de Odontologia. 1954. Vol. VII.

VAN PELT, S. J.: Hypnotic suggestion; its role in psychoneurotic and psychosomatic disorders. 1955. 95 pp. illus.

VIRTUE, R. W.: Hypothermic anesthesia. 1955. 62 pp.

Economic Security

The National Blue Cross Group For Members of the Canadian Dental Association

by E. L. R. WILLIAMSON, M.B.E., B.P.A., F.R.Econ.S., Consulting Economist and Administrator of the C.D.A. Plan.

PART I

The first problem which had to be faced in establishing the C.D.A. National Blue Cross scheme was the scope of the problem which had to be met; the second, what constituted the most practical and efficient method of meeting that problem.

The magnitude of the problem is revealed by the statistics of the Department of National Health and Welfare and the Dominion Bureau of Statistics:

1. 10.2% of the population is hospitalized for one day or more during the year with a total of 23,390,000 "person-days" in hospital, and a total hospital bill of approximately \$100,000,000.00.
2. The *average* hospitalization per family in the income group "\$5,000 or more", is \$131.50 annually. In this income group are to be found virtually all members of the Dental profession.

On the basis of the above facts, if 100% of hospital accounts were to be met under the C.D.A. Blue Cross for each member of the Canadian Dental Association, the premium rate would have had to be at least \$131.50 annually, *plus* the cost of administrative charges. A commercial insurance company usually considers a 60% "loss ratio"—i.e. 60% of premium income paid off in claims—and 40% for administrative charges, including agents' commissions, to be an appropriate figure. Under such an arrangement, the annual premium would have to be \$219.17—note that this is for hospitalization alone.

It should be apparent that such a form of contract would not be satisfactory nor in the interest of the members of the Canadian Dental Association. One of the recognized authorities in the insurance world, the "Insurance Courant" states:

"The function of insurance, any type of insurance, is to give protection against risks the policy holder is unable to afford from his own resources. INSURANCE IS INEVITABLY AT ITS BEST WHEN IT COVERS THE RISKS THE POLICY HOLDER CAN LEAST AFFORD TO INCUR. IT IS AT ITS WORST WHEN IT COVERS RISKS THE POLICY HOLDER CAN AFFORD. It is incumbent upon every insurer to perform this protection function as well as possible. In the field of hospital insurance, deductible policies are an absolute necessity if we are to do this."

In examining the ordinary Blue Cross contract, we found only 51 days' hospitalization, only \$25 each for X-rays and drugs, only 50% coverage of maternity cost and so forth. We found that the commercial companies' contracts are even more restricted than ordinary Blue Cross and proportionately much more expensive. We felt, and we believe rightly, that this coverage is not adequate to meet the high hospitalization costs which can and frequently do arise.

We felt that the C.D.A. Blue Cross Plan must "cover the risks the policy-holder can least afford to incur". It provides 180 days in hospital for the dentist and each member of his family; it provides up to \$150 for drugs and medications; it provides up to \$150 for X-rays; it provides unlimited laboratory and technical services; maternity charges are covered as fully as any other hospitalization, and so forth.

Further authorities whose opinions influenced the arrangements made for the C.D.A. Blue Cross are:

EDWIN J. FAULKNER—(Author of the recognized text-book on accident and health insurance).

"The deductible should be popular be-

cause it permits the insured to carry more nearly adequate coverage for a much lower premium".

"In spite of this fact the average policyholder clings to the idea of full-up coverage. Most policyholders feel that their disabilities will be of short duration, and they want them covered. The possibility of a serious, extended disability is hard for them to visualize in connection with themselves."

"Agents, too, because of the smaller premium involved in the deductible form (hence lower commissions) press the sale of full-up coverage".

"In spite of these factors, the deductible is being used more widely than ever before . . . Underwriters regard the deductible as the salvation of health insurance".

ALBERT STUMP—(Legal counsel for the Indiana State Medical Association).

"Disability insurance (including Hospital and Medical insurance) should be regarded as protection against what might otherwise be a calamity. To go beyond that is inadvisable . . . The physician or other person buying disability insurance should not expect financial miracles from the company . . . Obviously, any policy covering policyholders so completely that two out of every three would collect each year . . . would require a prohibitive premium". The choice must lie between a small elimination at the beginning or elimination of protection against disaster at the end where it really hurts.

CHARLES N. WALKER, F.S.A.—(Assistant Actuary, Lincoln National Life Insurance,

one of the ten largest companies in the USA).

"Hospital and medical care coverages are losing their economic value to the policyholder . . . this trend is primarily the result of *attempting to cover medical expenses from the first dollar*, of paying benefits for expenses which the insured could readily meet from his own pocket without the necessity for insurance."

"By eliminating expenses which the policyholder can pay from his own resources, the use of the deductible brings maximum protection within reach of his pocketbook . . . even a \$50 deductible will achieve a 25% reduction in rate."

"The health insurance industry has an obligation . . . to educate the public to provide the lesser items of medical expenses directly through their family budgets."

Coverages which conform more closely to the fundamental axioms of insurance are necessary to halt the race of premiums after loss ratios which has been going on for the past ten years . . . It is a matter of survival".

JOHN S. FORSYTH—(Canadian Manager of Wyatt Company, Consulting Actuaries and advisors to the Canadian Dental Association).

"We feel that the proper form of hospitalization, medical and surgical insurance for the professional man is that with a high deductible, of the order of \$500.00 per case. It is true insurance which gives full protection against catastrophe but at a reasonable rate because of the insured meeting the first \$500.00 of expense."

It has been said that no number of negative reports will prevent the profession from continuing to use and prescribe a worthless medication or practice a useless technique. This can only be construed as a sad state and statement both for our profession and its practitioners; and it is most difficult and saddening to believe that such a situation actually exists. If, however, proper emphasis and effort were channelled into reporting and publishing important negative findings on new (or even older) agents and techniques, a proper balance might be restored in the literature and thoughtfulness in therapy abetted. The publication of a negative report definitely fulfills a research protocol and clears verifiable untruths from the scene. Investigators should not be dissuaded from submitting negative reports for publication by unthinking review boards, critical colleagues, or selfish outside interests.

Austin H. Kutscher
Journal of Dental Education, May 1956.



Dr. W. Gordon Leahy Retires.

The Provinces

Quebec

Former students and present associates of **Prof. W. Gordon Leahy**, retiring Director of the McGill Clinic at the Montreal General Hospital, honoured him at a dinner on Tuesday, May 22nd, 1956.

The dinner, sponsored by the McGill Dental Faculty, was held at the Ritz Carlton Hotel, Montreal, with 157 former students, staff members and hospital associates attending.

Dr. Leahy has for years been as much a part of Dentistry at McGill as the Faculty itself has been a part of the University. In 1924 he was appointed Lecturer in Operative Dentistry and Director of the Dental Clinic. Later he became Assistant Professor, Associate Professor and in 1951 Professor of Operative Dentistry, all the while Chief of the Clinic.

Dr. Leahy saw the McGill Clinic advance from the days of the foot engine to the modern building and equipment it now enjoys. His great influence has been felt by all who have gone out from McGill during more than a quarter of a century — in fact, the majority of McGill dentists practising today. No one would attempt to evaluate what his association has meant to students and staff members alike.

Dr. A. L. Walsh, former dean, presented

Dr. Leahy, on behalf of those present, with a painting by the noted Canadian artist, Thomas Garside. He received also a gold watch from a group of McGill dental graduates from the New England States, and a purse from a similar group from Trinidad, B.W.I.

As Dr. Leahy retires at the close of this academic year, one and all wish him a long life and every happiness in the years ahead. One wonders, too, how a man such as he can ever be adequately replaced.

M. R.

Dr. S. Joffe has been elected president of the Montreal alumni chapter of the **Alpha Omega Dental Fraternity**.

Other officers elected were: Dr. D. Steinberg, vice-president; Dr. H. Skurnik, corresponding secretary; Dr. D. Kaplansky, recording secretary; Dr. F. Vosberg, treasurer; Dr. G. Silver, editor; Dr. M. Greenblatt, historian; Dr. L. Druckman, sergeant-at-arms; Dr. H. Caplan, chapter deputy; and Dr. H. Caplan, Dr. P. Cohen, Dr. L. Poch and Dr. I. Gornitsky, trustees.

The Annual Installation Meeting of the **Mount Royal Dental Society** was held on May 8th at Ruby Foo's Restaurant, commencing with cocktails at 6.30 p.m. and followed by dinner. The meeting was called to order at 9.30 and the minutes of the last Installation meeting were read and accepted. Dr. S. Feldman then discharged the past year's executive and installed the newly elected officers. He then presented to the society, on his behalf, a gift of a gavel.

Dr. M. Lang, the new President, after a short speech of acceptance, called on Dr. I. B. Hyams to make a presentation to our past president, Dr. S. Silver, for the competent manner in which he had performed his duties during the past year.

Life Memberships were then bestowed upon Drs. E. Kutzman, M. Rattner, N. P. Solomon and J. Wiener. These men have been in practice for 35 years and members in good standing of the society for 30 years.

The meeting was then adjourned to good and welfare.

The new executive is as follows:

President — Dr. Morton R. Lang.

Vice-President — Dr. A. W. Bazerman.

Secretary — Dr. A. J. Colle.

Treasurer — Dr. Steinberg.

Asst. Sec. — Dr. D. Solomon.

Historian — Dr. M. H. Toker.

Past President — Dr. S. Silver.

Members — Drs. D. Druckman, Pesner, Lubin, Anita Mendel Baer, H. Rosen and M. Lapedis.

D. S.



Part of the audience in the amphitheatre of the Montreal General Hospital watching a clinical presentation by Dr. Louis I. Grossman of the University of Pennsylvania.

More than 150 members of the medical and dental professions gathered in the amphitheatre of the Montreal General Hospital on May 14th and watched dental surgery being performed on television for the first time in Canada.

Under the auspices of the McGill University Faculty of Dentistry and the Montreal Endodontia Society, Dr. Louis I. Grossman, of the University of Pennsylvania, conducted a one-day refresher course in endodontics and root surgery.

The event was made possible by RCA Victor Company, Ltd., which supplied the equipment. It featured a closed circuit linking the tiered, fan-shaped auditorium with the operating room two floors below.

A coaxial cable feeding into six 21-inch TV sets connected Dr. Grossman with his audience, and viewers were able to ask questions by means of a microphone in the amphitheatre. According to the sponsors, this brought to the audience greater

detail than has ever before been possible.

Two cameras and a control monitor were set up in the operating room. One of the cameras, fitted with a Zoomar lens, focussed on the operation, and the other on X-rays of the patient.

The Zoomar was a key factor in demonstrating to the group of dentists and physicians TV's effectiveness as an educational medium.

F. R. Deakins, president of RCA Victor, said the showing reflected a growing trend toward use of TV for other than commercial purposes.

"Many hospitals and medical schools are looking into the possibilities of using television as a teaching aid, in consultation and diagnosis, and in medical research," he stated. "We think it has a very bright future, perhaps even more so in color than in black and white because color gives greater realism."

Dr. E. S. Dorion was elected president of the **Montreal Section of the American Academy of Dental Medicine** at the Annual Meeting held in the Université de Montreal on May 24th.

With the retiring President, Dr. V. Dube, in the chair, elections for the year 1956-57 were held following the business meeting. Other officers elected were:

Dr. V. Dube — Immed. Past President.

Dr. A. L. Scherzer — Vice-President.

Dr. Guy Langelier — Secretary-Treasurer.

Dr. H. Oliver — Member of the Executive.

Dr. R. Wiener — Member of the Executive.

Dr. H. M. Robichaud — Member of the Executive.

Following the elections, members and their wives were entertained at a cocktail party and dinner. Later in the evening, a movie was presented in the beautiful theatre of the Université de Montreal.

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The annual spring Golf Meet of the **Montreal Dental Club** was held at the Knowlton Golf Club on the week-end of June 8-10. An interesting report of this important meeting will undoubtedly find its way into these pages in the next issue. . .

It is with regret that the reporter of the meetings of the Montreal Dental Club has found it necessary to relinquish his position due to the pressure of other commitments. The Provincial Editor wishes to express his thanks to Dr. Dave Munro for his fine work in the past in presenting the news from the M.D.C. to the readers of *The Journal*.

R. F. H.

British Columbia

Days to remember were May 17, 18 and 19 when the **B.C. Dental Association** held its 40th **Annual Convention** in the Hotel Vancouver. An enthusiastic throng of 379 dentists registered for three days of education, enjoyment and camaraderie. The unfailing sunshine and vernal elegance of our city provided an incomparable setting, especially for those who hailed from the U.S. and B.C.'s hinterland.

The program commenced with words of welcome from Dr. E. E. Martin, the President; Dr. Leslie Marshall, the Convention Chairman; and Dr. Wm. Scott, the Program Chairman, who introduced the featured clinicians. The Honourable Robert Bonner, Attorney-General of B.C., gave the opening address and brought official greetings from the Provincial Government.

An innovation this year was that the essayists conducted a course of study which everyone could attend. The exponents were Dr. Cecil Bliss of Sioux City, Iowa, whose addresses covered "Practice Management", and Drs. Rex Ingraham, Rene Eidson and Lem Sweet of U.C.L.A., whose subject was "The Application of Increased Operating Speeds and Modern Instruments to Restorative Dentistry".

Dr. Bliss at the outset gave these ten commandments for professional success: "Be unquestionably honest. Know your business. Think in terms of success. Be agreeable. Avoid arguments. Be tactful. Be modest. Learn to listen. Remember names and faces. Cultivate a genuine interest in people."

On the second day a clinic on the subject of "High Speed" was given by means of closed circuit television. It proved highly successful, as the 20 outlets enabled everyone to witness the operations which were performed on the stage.

For the first time the convention lasted for three days. Another first was commercial exhibits. At mid-morning and mid-afternoon, coffee and fruit juices were dispensed by courtesy of commercial concerns, and this gave one the opportunity to renew acquaintances and meet new confreres. (It also seemed to keep many from straying outside.) Visual education films in colour and sound were given at specified times throughout the entire convention.

On the last day twenty-one fine table clinics were presented by outstanding men from all over the Northwest, covering every branch of dental practice.

Business conclaves are an indispensable adjunct of conventions. The annual meeting of the College of Dental Surgeons of B.C., and of the Dentists' Legal Protective Association were held on the second afternoon. The third afternoon, following luncheon, was devoted to the annual business meeting of the B.C. Dental Association.

At this important session the President in his valedictory address reviewed the year's work and accomplishments. Reports of the other officers and committee chairmen were discussed and approved.

Three senior dentists were presented with framed diplomas attesting their membership in the 75-50-25 club which is composed of those who have practised for 50 years, 25 of them in B.C., and who are 75 years of age. Eight men in British Columbia are eligible, and those present who were honored were Dr. W. J. Rutherford, Dr. W. H. Geddes and Dr. E. C. Jones. Dr. Geddes spoke briefly on behalf of the recipients.

Officers for the coming season are:—

President — Dr. W. B. Milburn, Victoria.

President-Elect — Dr. L. W. Beamish, New Westminster.

Secretary — Dr. David Parfitt, Victoria.

Treasurer — Dr. Max Nacht, Vancouver.

Directors — Drs. W. E. Shaw, Mission; J. G. Ryan, Vancouver; W. A. MacDonald, Victoria; K. J. P. Tawse, New Westminster; M. J. Waterman, Vancouver, and H. J. Coursier, Vernon.

Another inevitable and much-relished aspect of dental conferences is the entertainment. The dentists and their wives enjoyed cocktails, a smorgasbord supper and dancing at the Canyon Gardens on the first evening. Under a leafy canopy, this night club beneath the mountains was unusually alluring in the spring moonlight.

Nor were the ladies overlooked. Mrs. E. E. Martin's committee provided a sherry and coffee party at the Hotel Georgia, a luncheon at Ming's Restaurant in our famous Chinatown, a scenic drive through Stanley Park and the swank British Properties, and a shopping tour in the deluxe Park Royal of West Vancouver, ending with coffee at a well-known French hostelry in the vicinity.

On the final evening a cocktail party and the President's dinner-dance in the Hotel Vancouver Ballroom proved to be a gala affair, a fitting termination to a successful convention.

D. H. M.

Alberta

Dr. Arnold H. Lane was elected president of the **Edmonton and District Dental Society** at a supper meeting in the Seven Seas recently. He succeeds Dr. A. D. Fee.

Other executive members are: Dr. S. Gordon Geldart, vice-president; Dr. J. H. M. Young, secretary; Dr. R. Blackmore, treasurer; Dr. R. B. Hager, social convener; Dr. W. S. Murray, Dr. V. Kuzyk, and Dr. Fee, directors.

Dr. W. S. Hamilton, of the faculty of dentistry at the University of Alberta, urged society members to consider giving further dental health service to Edmonton school children.

A committee was set up to publicize preventive dentistry. So far, fluoridation is the most effective form of prevention of dental decay, it was stated.

The society's first golf meeting was held May 31st at Elk Island Park. Formal monthly meetings will resume in the fall.

Prince Edward Island

The **Prince Edward Dental Association** annual meeting was held in Charlottetown

recently. The following officers were elected for the ensuing year:

President — Dr. O. H. Phillips, Alberton.

Vice-President — Dr. J. A. Dorion, Summerside.

Secretary Registrar-Treas. — Dr. Heath McIntyre, Charlottetown.

Members of the Council — Dr. G. D. Barrett, Charlottetown, and Dr. Hector McKenzie, Charlottetown.

Dr. A. Wylie Allan was elected as provincial representative on the Board of Governors of The Canadian Dental Association. Dr. J. D. Reddin, Mount Stewart, was elected as an alternate.

Ontario

The **89th Annual Convention of The Ontario Dental Association** was held on May 13, 14, 15 and 16 at the Royal York Hotel, Toronto. President Dr. Harry Bateman, his executive and sub-committee members must have been proud men. The entire convention moved with great success both socially and academically. The general chairman, Dr. F. H. Shepherd, and the secretary, Mrs. R. E. Booker, deserve singular mention. Mrs. H. Bateman graciously chaired the Ladies' Convention Committee. The social highlights were the Sunday Evening Musical featuring the mixed choirs of the Leslie Bell Singers and the Tuesday Evening informal dinner dance. Both events were attended with customary enjoyment.

The curtain rose on Monday at 8.30 a.m. at which time Dr. A. L. Kaukinen, Chairman, Dental Public Health Council of Ontario, presided at the breakfast meeting. The highly respected J. H. Ebbs, M.D., Director of the Department of Physical and Health Education, University of Toronto, Senior Staff Paediatrician, Hospital for Sick Children, Toronto, addressed the assembled breakfasters on the subject "The Need for Effective Relay of New Knowledge to the Practitioner". During the remainder of Monday forenoon a variety of scientific motion pictures and dental public health films were shown. Monday's luncheon ultimately gave way to the guest speaker, Mr. Daniel Coughlan, Director of Probation Services for Ontario, whose necessarily condensed subject "New Horizons in Penal Reform" aroused interested concern. The Ontario Dental Association and the Dentists' Legal Protective Association, met early Monday afternoon. Two papers "An Altered Concept of Interpreting Alveolar Bone Changes" by Clifton Eselman, D.D.S., F.A.C.D., F.A.A.O.R., Pittsburgh, Pennsylvania, and "A Modern Immediate Denture Service" by Emmett Beckley, D.D.S., F.I.C.D., Kansas City, Missouri, concluded Monday's happenings.



Dr. Joseph A. Boyd, Stratford, Ontario, President of The Ontario Dental Association.

Tuesday and Wednesday mornings are the periods designated for the group clinics. In all there were fifteen papers presented. Of these the individual may attend only four and this, of course, is the chronic problem — which four to choose when all fifteen are of interest and value. The decision becomes more complex when one of these clinics is the very popular Dental Public Health Committee's "Seminar in One-Quarter Time" demonstrating four different phases of dentistry for children.

Dr. E. A. White, chairman of the Dental Public Health Committee of the Ontario Dental Association, conducted the Dental Public Health Luncheon on Tuesday featuring Herman E. Hilleboe, M.D., M.P.H., Commissioner of Health, State of New York Department of Health, Immediate Past President, American Public Health Association. The speaker read his paper "The Place of Dentistry in a Public Health Programme".

The incoming president, Dr. J. A. Boyd, of Stratford, Ontario, was installed in office by Dr. Don W. Gullett and Dr. Bateman received his past-president's badge.

Moderator P. G. Anderson, D.D.S., F.I.C.D., F.A.C.D., directed a series of six fifteen minute presentations throughout

Tuesday afternoon. These were "A Mathematical Technique for Radiographing Impacted Teeth" by J. Clifton Eselman, D.D.S., F.A.C.D., F.A.A.O.R., Pittsburgh, Pennsylvania; "Stabilizing Faulty Denture Retention" by Emmett Beckley, D.D.S., F.I.C.D., Kansas City, Missouri; "Porcelain Fused to High-Melting-Range Gold in Fixed Bridge Prosthesis" by S. Charles Brecker, D.D.S., New York, N.Y.; "Extra-Oral Appliances, Class II Malocclusions and the General Practitioner" by T. M. Graber, D.D.S., M.S.D., Ph.D., Evanston, Illinois; "Control of Post-operative Swelling with Antihistamines" by Viggo B. Sorenson, D.D.S., Chicago, Illinois; and "Is there a Relationship between Periodontal Disease and Systemic pathology?" by Wallace F. Walford, D.D.S., Montreal, P.Q.

Table clinics always afford a relaxing means of study and conviviality and thirty such clinics were presented Wednesday afternoon.

Continually throughout three of the convention days, sixty-five exhibitors courteously offered their assistance and proffered the latest in dental materials and supplies.

The highlight of the 89th Convention of the Ontario Dental Association unquestionably was the conferring of a lifetime membership in this association upon Dr. R. S. Woollatt by Dean Emeritus A. D. A. Mason. Dr. Woollatt's words and presence filled the hall with an aura of happiness and goodwill — qualities which he radiates.

The official aspects of this meeting saw the following elected to office in the Ontario Dental Association:

Dr. J. A. Boyd of Stratford was installed president. He succeeds Dr. H. R. Bateman of Toronto. President-elect is Dr. F. H. Shepherd of Toronto. Dr. L. M. Grose of Toronto is historian and archivist, and Mrs. R. E. Booker of Toronto is secretary-treasurer.

Members of the board of governors are Drs. E. T. Guest and J. G. Chalmers of Toronto; E. E. Johns of Kingston; K. M. Phillips of Welland; C. L. Strachan of London; J. R. Jeffery of Kirkland Lake; and L. E. Hastings of Fort William.

On the dental public health committee are Drs. M. G. Boyes, E. A. White, R. R. Butler, H. A. Swales, D. L. Rife, K. F. Pownall, S. T. Peterkin, K. W. Davey and Marjorie Jackson, all of Toronto.

Drs. J. A. Bothwell and R. S. Woollatt of Toronto and Russell Hyde of Hagersville were named to the benevolence committee. Dr. A. W. Lindsay of Toronto is editor of the Ontario Dental Journal.

E. R. B.



DENTAL NURSING FACULTY OF DENTISTRY, TORONTO — SESSION 1955-56

From left to right—

First row — Beverly Blue; Donna Fleming; Gloria Finkelstein; Margot Thompson; Barbara Graham; Leonice Roe; Sheila McCloskey; Pauline Black.

Second row — Jacquelyn Carr; Beverley LaRoche; Lynne Griffiths; Diana Mermer; Ann Johnston; Nancy Airth; Sally McGillis.

Third row—Mary McCarthy; Ann Cochrane; Patricia Van Camp; Barbara Martin; Paulette Engel. Joan Huggan — absent (ill).

The executive of the **Hamilton Dental Association** for the year 1956-57 is now constituted as follows:

President — Dr. J. Foster Kilgour.
 Vice-Pres. — Dr. W. H. Feasby.
 Secretary — Dr. P. T. Smylski.
 Treasurer — Dr. R. H. Finlayson.
 Program Chairman — Dr. S. Rosen.
 Directors — Dr. A. J. Quick, Dr. W. W. Baxter.

P. T. S.

The Kingston and District Dental Society held its April dinner meeting in Morrison's Lounge. Dr. John D. Lyon, the president, was in the chair for the meeting and introduced the speaker of the evening, Mr. Malcolm of the Victoria and Grey Trust Company. Estate planning was discussed,

including the subject of wills and the problems involved with succession duties. After his presentation, discussion brought forth further points relating to the address. The speaker was thanked by Dr. Frank Sorensen.

The March meeting of the society was held at the same place; Dr. J. Kreutzer, professor of preventive dentistry at the University of Toronto, spoke on "Nutrition and the Tooth."

Over two hundred dentists — members of **The Canadian Society of Dentistry for Children** gathered in the Royal York Hotel on Saturday, May 12th. Consistent with the aims and ideals of this organization is the widespread feeling on the part of dentists in general that dentistry for children is not

a specialization field to be left to a few but is a major part of every true general practice. The sombre cloak of fear surrounding dentistry for children has been shed and in its place is worn a shiny vestment of appreciative understanding. The unselfish and continued efforts of men such as Dr. D. L. Rife — president of this C.S.D.C. annual meeting — have been largely responsible for this new conception. President Don Rife and president-elect Dr. Wilf Feasby working with their efficient executive, developed a meeting of concentrated benefit to all in attendance. The first hour and one-half was given to six table clinicians whose demonstrations were directed toward pulp care and treatment, and space maintenance. The table clinicians were Robert Rapp, D.D.S., Ann Arbor, Michigan; Wm. Davidson, D.D.S., Newfane, New York; Murray Buchman, D.D.S., Toronto; Herbert A. Sorenson, D.D.S., Toronto; Wm. Wallace, D.D.S., Kenmore, New York; and Wm. J. Simpson, D.D.S., Niagara Falls, Ontario. Dr. L. S. Fosdick, (Ph.D.), Professor of Chemistry, Dental School, Northwestern University, Chicago, considered by many to be the leading authority in the biochemical aspect of dental caries, presented a paper entitled "Prevention of Dental Caries". Stress was laid upon the ravaging qualities of fermentable carbohydrates which still remain as our main adversary. Dr. Fosdick re-emphasized that our main weapon of defence and the one of practical choice was the controlled fluoridation of communal water supplies.

The business meeting saw the election of the new officers and the unanimous acceptance of changes in the constitution. The assembled members of one accord accepted the proposal that the society should become a section of the Canadian Dental Association. Dr. Rife detailed the merits of such a plan.

During the luncheon meeting the new president, Dr. W. L. Feasby, accepted office and gave due credit to Dr. Rife for superb contributions to this society. Further and deserving credit was bestowed upon a

greatly appreciated and tireless worker, Dr. D. L. Anderson, secretary-treasurer of this Society. Dr. Rife retired to the office of immediate past president, giving his audience some sincere philisophical thoughts.

The afternoon session offered first a paper entitled "Emergency Endodontic Treatment in Accidents to Children" presented by George C. Hare, D.D.S., Associate Professor, Operative Dentistry, Faculty of Dentistry, University of Toronto. This ever-harassing phase of dentistry received the most helpful consideration, enabling the audience to benefit to a man.

The day's stated meeting was concluded by an orthodontic symposium chaired by Dr. Lorne Scott. The panel members presented short papers all concerning the general subject of "Orthodontic Problems and Mixed Dentitions". The panel members of this popular type of clinic were Albert Jarvis, D.D.S., M.Sc.D.; W. K. Shultis, D.D.S.; Lorne Riddolls, D.D.S.; and W. J. Spence, D.D.S., M.S.

The newly elected officers to this Society are as follows:

Honorary President — D. L. Rife.

President — W. Feasby.

President Elect — G. Nikiforuk.

Vice-President — D. Anderson.

Secretary-Treasurer — W. Spence.

Historian — A. W. S. Wood.

Councillors — D. Johnstone, W. Burgman, F. Dawe, N. Mancini, P. Currie, C. Strachan, C. D. Beierl, E. White, M. Crockford, M. Boyes, D. Mitchell, J. Callingham.

E. R. B.

The following were elected recently to the 1956-57 executive of the **Essex County Dental Society**:

President — Dr. T. H. Wachna.

Vice President — Dr. R. M. Sanderson.

Treasurer — Dr. D. C. Wickens.

Secretary — Dr. W. J. Pritchard.

The Corps

Because of the sudden death of his brother, Dr. R. M. Wansbrough, Surgeon-in-Chief, Sick Children's Hospital, Toronto, Brig. E. M. Wansbrough returned from Europe and was unable to attend the 44th Annual Meeting of the Federation Dentaire Internationale held in Zurich, Switzerland.

The promotion of Major C. E. Purdy to the rank of Lieutenant-Colonel has been announced. Lieutenant-Colonel Purdy graduated from the University of Toronto in 1933 and practised in Toronto until he joined the Canadian Dental Corps in 1942. During his tenure of service he has been an instructor at the R.C.D.C. School, second-in-command of No. 1 Field Dental Unit in Germany and latterly Assistant Director of Dental Services in the Directorate. He will command the dental unit in Gagetown this summer.

Colonel L. E. Kent of the Dental Advisory Staff, Quebec Command, has been appointed Queen's Honorary Dental Surgeon. Colonel Kent served in the Corps for six years during the Second World War and commanded a company in England. He now practises in Lachine, Quebec.

Colonel K. M. Baird recently inspected Militia dental units, participating in the General Efficiency Competition which is held annually.

Lt.-Col. V. R. Farrell is now on rehabilitation leave preliminary to his retirement on September 30, 1956. Col. Farrell was born in Grimsby, Ont., where he practised after graduation from the Royal College of Dental Surgeons in 1920. In May 1940 he was appointed to the Corps and served in the United Kingdom from March 1941 until July 1945. In the post-war years he served in

various clinics in Ontario until his appointment as Assistant Director of Dental Services in Ottawa. Subsequently he was appointed Senior Specialist and served as such in Ottawa and HMCS Cornwallis, Digby, N.S.

The best wishes of the Corps go with Col. Farrell on his retirement.

Twenty recent graduates have joined the Corps. Their names and universities from which they graduated are given below.

From the University of Alberta:

E. Adler
O. Chaikin
D. J. Cherry
C. J. Edwards
W. D. McGinnis
R. D. Welsh
J. J. W. Wright

From the University of Toronto:

E. G. Baird
R. A. Bell
W. R. Black
P. W. W. Kurylowicz
R. V. S. Muscat

From McGill University:

D. J. MacPhee
A. Vachon
C. S. Whitman

From the University of Montreal:

J. G. G. Hebert
A. G. J. Laurin

From Dalhousie University:

A. P. Menzies
E. S. Morrison
J. R. Fraser

Capt. H. J. Smart has been released from the Corps on completion of his short service commission. He is now practising in Montreal.

In Memoriam

Thomas Harry Hutchinson — Dr. Thomas Harry Hutchinson of Port Arthur, Ontario, passed away on May 17, 1956 at the age of 60 years.

Born near Aurora, Dr. Hutchinson attended High School in Aurora, received his matriculation at Woodstock College and in 1918 graduated from the Royal College of Dental Surgeons of Ontario.

Dr. Hutchinson began his practice in Lethbridge, Alberta and Salmon Arm, B.C., later moving to Port Arthur in 1919.

He was former secretary and past-president of the Thunder Bay Dental Society, president of the Port Arthur Gyro Club in 1933-34, Chairman of the Health Committee

of the Rehabilitation Council, Port Arthur, in 1942, president of the Northwestern Musical Festival Board in 1934 and a member of the Board of Education of Port Arthur for seven years. He was a Commander Brother of the Order of St. John and was the recipient of signal honours, tendered by Governors-General of Canada for services in St. Johns Order.

Dr. Hutchinson served with the Dental Corps in World War I during 1915-17. He belonged to the Baptist Church.

Dr. Hutchinson is survived by his wife, Florence Walker Hutchinson, his daughter, Yvonne M., of Winnipeg and his son, Dr. Jamie H. W. Hutchinson (M.D.) of Hamilton, Ontario.

Donald Keough McIntosh — Dr. Donald Keough McIntosh of Blind River, Ontario, passed away on May 9, 1956 at the age of 66 years.

Born in Vankleek Hill, Ontario, Dr. McIntosh graduated from the Royal College of Dental Surgeons in 1912. He practised in Thessalon and Blind River, Ontario.

Dr. McIntosh belonged to Branch 189 of the Canadian Legion, and Dymment Lodge A.F. and A.M. He served with the Canadian Army Dental Corps. Dr. McIntosh was a member of the United Church.

Dr. McIntosh is survived by three brothers and five sisters.

Frederick Albert Campbell — Dr. Frederick Albert Campbell of Barrie, Ontario passed away on May 15, 1956 at the age of 42 years.

Born in Nanton, Alberta, Dr. Campbell graduated from the Faculty of Dentistry of the University of Toronto in 1951. He then took over the practice of the late Dr. John Gourlay in Barrie.

Dr. Campbell belonged to the Muskoka-Simcoe Dental Society, the Lions Club of Barrie and was a director of the Barrie Camera Club. He was chairman of the Committee of Stewards of Collier Street United Church. He was an ardent curler and skipped his rink to the club championship in 1955.

Mrs. Campbell survives with one daughter and one son.

Hugh Edwin Wesley Richardson — Dr. Hugh Edwin Wesley Richardson of Toronto, Ontario passed away on June 1, 1956 at the age of 77 years.

Born in York County, Dr. Richardson received his early education at Harbord Collegiate Institute, Toronto and in 1903 graduated from the Royal College of Dental Surgeons of Ontario.

For over fifty years he practised at the same location in Toronto, retiring in October 1955. He was an Honorary Member of both the Royal College of Dental Surgeons of Ontario and the Academy of Dentistry, Toronto.

Dr. Richardson helped to organize Centennial United Church in Toronto and was also a member of Islington United.

Surviving Dr. Richardson are his wife, the former Nellie Palmer, and two daughters, Mrs. Stewart East and Mrs. Harvey Rutledge.

Orr Herman Sloan — Dr. Orr Herman Sloan of Weston, Ontario passed away on May 11, 1956 at the age of 67 years.

Born in Tottenham, Ontario, Dr. Sloan

received his matriculation there in 1908 and later graduated in 1917 from Northwestern University Dental School. He began his practice in Drumheller, Alberta, from 1918-1934, practised for a short time in Burks Falls and then moved to Weston where he continued his work until his death.

Dr. Sloan was the dental examiner of the schools in Alberta. He was connected with the Drumheller Hospital in Alberta and the Western Hospital in Toronto.

Dr. Sloan was president of the Weston Bowling Club in 1938, was a member of the Masonic Order, Knights of Pythias, the Odd-fellows C.C. in K. of P. 1922 and was 2nd Pr. R.A.M. in 1940 also Marshal Knights Templar in 1940. He was a member of the Presbyterian Church.

Dr. Sloan is survived by his wife, his daughter, Mrs. J. Jensen, and two sons, Mack and Jack.

William B. Cavanagh — Dr. William B. Cavanagh of Cornwall, Ontario passed away on April 28, 1956 at the age of 86 years.

Dr. Cavanagh graduated from the Royal College of Dental Surgeons in 1895. He practised in Cornwall where he held the position of Mayor from 1906-1926.

Dr. Cavanagh was a member of St. Columban's Roman Catholic Church in Cornwall.

Lionel Desrosiers — Dr. Lionel Desrosiers died suddenly in Joliette on May 2, 1956.

Dr. Desrosiers was president of the Dental Society of Joliette and a former governor of the College of Dental Surgeons of the Province of Quebec.

In addition to his brother, he is survived by his wife, the former Antoinette Bonenfant, and four sisters.

Edgar Harold Niebel — Dr. Edgar Harold Niebel of Capreol, Ontario passed away on May 31, 1956 at the age of 72 years.

Born in Wemyss, Ontario, Dr. Niebel received his early education at Norwood, graduated from the Royal College of Dental Surgeons of Ontario in 1922.

Dr. Niebel began his practice in Thessalon, moving to Capreol in 1923 where he remained in practice until his retirement in February, 1954.

Dr. Niebel was a member of the Capreol School Board in 1939. He was the Honorary Lay Secretary for the Diocese of Algoma and was a member of the Executive Council for the Church of England from 1930 to 1940. He was a member of St. Alban's Church in Capreol.

Surviving Dr. Niebel are two sisters, Mrs. C. H. Leach and May R. Niebel and a brother, Herbert.

DR. HAROLD K. BOX

RESEARCHER—TEACHER
PRACTITIONER

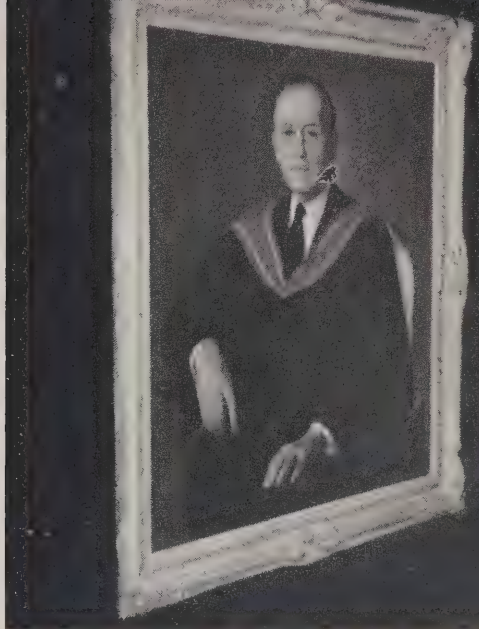
Dr. Harold Keith Box, age 66, died very suddenly at his home in Toronto on May 24th, 1956. Just a few days before his death he outlined to a group of his associates, with his usual eloquence and enthusiasm, new studies that he was anxious to develop. He had spent all of the day immediately preceding his death in the service of his patients.

Since Dr. Box's childhood in Carleton Place, Ontario, his career has been characterized by academic brilliance, insatiable inquisitiveness and the courage to be progressive. These qualities were supported by a strong integrity of purpose and true devotion to his family, his friends and his profession.

In the same year (1914), that he graduated from the Royal College of Dental Surgeons of Ontario, he joined the staff as a demonstrator in bacteriology. He had a continuous association with the staff of the Royal College of Dental Surgeons and later with the Faculty of Dentistry of the University of Toronto until his retirement in May, 1956. From 1920 to 1927, he served as Professor of Dental Pathology and Periodontology. From 1927 until his death he was Research Professor in Periodontology.

He received a Ph.D. degree in 1920. In 1921 he was elected the First Fellow of the American Academy of Periodontology. Dr. Box was a Fellow in Dental Surgery of the Royal College of Dental Surgeons, a Fellow of the Royal Society of Medicine and of the Royal Microscopical Society of England, an honorary member of the American Academy of Dental Medicine and an honorary life member of the Ontario Dental Association and the Toronto Academy of Dentistry.

Among his many awards were numbered



DR. HAROLD K. BOX
1890—1956

the Canadian Dental Research Medal, the Jarvie Fellowship Medal of the Dental Society of the State of New York and the Fones Memorial Medal of the Connecticut Dental Association. He also was honorary consultant to the Ontario Department of Health.

Of the many honours conferred upon him, he seemed to cherish particularly the occasion when The Canadian Dental Association conferred on him honorary life-membership during the May, 1955 convention. A portrait of Dr. Box, presented at that time, now occupies a place of honour in the Faculty of Dentistry of the University of Toronto.

He had written a total of seventy articles, bulletins and monographs. Most of these were related to the etiology, histo-pathology and treatment of periodontal disease, but the remainder showed a wide range of interest in all matters pertaining to dental disease . . . His latest monograph "Oxygen Insufflation in Periodontal Disease" was published in 1955.

His imagination led him from what could have been an easy but stifling security into the realm of the strange and difficult. For over forty years he pioneered and he led us to a greater measure of perception.

C. H. M. W.

ANNOUNCEMENTS

Conventions of The Canadian Dental Association

1957	Winnipeg, Manitoba	June 23rd—26th
1958	Montreal, Quebec	Oct. 5th—8th
1959	Ottawa, Ontario	
1960	Halifax, Nova Scotia	

FUTURE EVENTS

Date	Function	Location	Officer	Address
Aug. 30-Sept. 1	Saskatchewan Dental Assoc. Convention	Waskesiu	Dr. G. H. Janzen	11 Knox Block, Prince Albert, Sask.
Sept. 7-8-9	N.O.D.A. Convention	Sault Ste. Mar'e Ontario	Dr. L. B. Lukenda	2 Albert St. E., Sault Ste. Marie, Ontario.
Sept. 23-25	E.O.D.A. Convention	Ottawa, Ont.	Dr. A. C. Stinson	202 Laurier Ave., Ottawa, Ont.
Oct. 17, 18, 19	Montreal Dental Club Annual Fall Clinic	Montreal	Dr. Bruce Ward	1414 Drummond St. Montreal, P.Q.
Nov. 23	Faculty Day Dental Alumni Assoc.	Toronto, Ont.	Dr. R. Moore	2 Grenview Blvd. Toronto, Ont.
Dec. 3-7	Greater New York Dental Meeting	New York	Dr. R. E. Morse	Room 106A, Hotel Statler, New York, N.Y.
Sept. 7-14 1957	Congres de la Federation Dentaire International-	Rome, Italy	G. H. Leatherman	Secretary, London, England.

SHORT GRADUATE COURSES

Tufts School of Dental Medicine announces the following courses:

Occluso-Rehabilitation I—Lecture and Seminar Course
Sept. 21 through Sept. 26, 1956.

Occluso-Rehabilitation II—Special Participation Course
Seven months beginning October 5, 1956.

A Participation Course in Periodontics Ten Mondays beginning October 8, 1956.

Participation Course in Periodontology October 8 through October 12, 1956.

Minor Oral Surgery October 17 to December 5, 1956.

Full Denture Implants January 7 through January 11, 1957.

Occlusal Equilibration February 11, 12, and 13, 1957.

Participation Course in Periodontology April 8 through April 12, 1957.

Full Denture Prosthesis June 3 through June 7, 1957.

For further information contact: Dr. Irving Glickman, Director, Division of Post-Graduate Studies, 136 Harrison Ave. Boston, Mass.

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For further information: Secretary, Postgraduate Division, New York University, College of Dentistry, 209 East 23rd Street, New York 10, N.Y.

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Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

Notre profession . . . demain

La Société dentaire de Montréal, à sa séance mensuelle de mai 1956, avait prié quatre conférenciers de présenter un aperçu de ce que sera la profession dentaire dans une vingtaine d'années. Chacune des communications traite d'un aspect différent de la question.

N.D.L.R.

L'enseignement dentaire

par GERARD de MONTIGNY, Montréal.

L'intention qu'a eu le comité des conférences et des cliniques de la Société dentaire de Montréal, en organisant ce forum, ce ne fut pas de soulever un débat entre les participants de ce que les anglais appellent un "panel discussion", puisque les conférenciers traiteront chacun d'un aspect différent du domaine dentaire. Son but était surtout de susciter dans l'esprit de l'assistance un intérêt en regard de la dentisterie de l'avenir.

Les exposés qui seront faits à cette tribune doivent donc se situer dans les limites suivantes: En tenant compte des tendances actuelles, que deviendra la profession dentaire dans une vingtaine d'années? En d'autres termes, l'addition de fluor dans l'eau de consommation, l'établissement de l'assurance-santé et les réalisations des recherches, tant dans la sphère de l'outillage et des matériaux

que dans le champ scientifique, le rendement des campagnes d'hygiène dentaire publique, etc. etc., tous ces facteurs auront-ils une répercussion considérable sur la profession dentaire de l'avenir? Et les modifications, qui seront nécessairement apportées aux fonctions professionnelles du dentiste, influenceront, à nul doute, les directives qu'il reçoit de ses organismes dirigeants, comme le Collège des Dentistes et l'Association dentaire canadienne. C'est-à-dire, que se proposent de faire ces deux organismes pour marcher de pair avec les tangeantes nouvelles que prendra peut-être l'exercice dentaire?

Gouverner, c'est prévoir dit-on. Alors, quels sont les projets à long terme de l'Association dentaire canadienne et du Collège pour préparer cet avenir? Essayons donc, à la lumière des données

présentes, de soulever un voile sur ce que sera le dentiste de l'an de grâce 1976.

Et avant de commencer, disons tout de suite que les idées qui seront émises par chacun des conférenciers n'engagent qu'eux-mêmes et qu'ils parlent en leur propre nom, sans refléter l'opinion de l'institution officielle dont ils peuvent faire partie. On m'a prié de parler de l'enseignement de la science dentaire de l'avenir. Eh bien, je conçois mal l'idée d'enseignement, sans y incorporer nécessairement, les deux principaux intéressés, je veux dire les élèves et les professeurs.

Parlons d'abord des étudiants. Que seront-ils, ou plutôt, quelle formation primaire et secondaire auront-ils reçues quand ils se présenteront à la faculté de chirurgie dentaire? Disons tout de suite qu'ils seront nombreux, puisque les statistiques de naissances entre les années 1940 et 1950 ont établi des records dans le pays tout entier, à cause de facteurs qu'il serait trop long d'énumérer ici.

Délaissions aussi l'enseignement primaire et, pour épargner du temps, passons à l'enseignement secondaire.

Les candidats aux études dentaires seront mieux choisis, c'est-à-dire, qu'ils seront plus à leur place que dans le passé. L'ampleur et l'amélioration données aux tests d'orientation professionnelle aideront certes à diriger les élèves vers les carrières pour lesquelles ils sont mieux adaptés.

Les programmes secondaires subissent sans cesse des modifications pour les mieux adapter aux nécessités présentes. Le cours classique n'est plus ce qu'il était il y a vingt ans et cette évolution se poursuit sans cesse et se poursuivra encore longtemps.

En certains milieux, on désire que le B.A. français se rapproche de bien près du B.A. anglais, pour qu'il reçoive la même reconnaissance que celui-ci dans les milieux éducationnels anglo-saxons, que nous sommes appelés à pénétrer davantage. En attendant cette modification fondamentale, nous avons présentement quatre sortes de baccalauréats "es arts". Le baccalauréat A, qui insiste surtout sur

la philosophie et les lettres. C'est le parchemin que convoitent ceux qui se destinent au droit, à la théologie, à la pédagogie. Il y a le baccalauréat B, centré sur la philosophie et les sciences; il y a le baccalauréat C, qui appuie sur le latin et les sciences; ici le grec est remplacé par les sciences. Ces deux catégories B et C, forment les candidats aux carrières scientifiques, c.-à-d., chirurgie dentaire, médecine, génie, sciences, mathématiques.

Il y a enfin le baccalauréat D, décerné aux adultes par les cours d'extension, par un curriculum et dans des circonstances particulières.

C'est donc à dire que les élèves des cours secondaires peuvent opter, c.-à-d. peuvent choisir, à certains endroits dès les belles-lettres, le cours d'études qui s'adapte le mieux à leur tempérament et leurs aptitudes.

Je crois que cette innovation—c'est en fait une innovation, puisqu'elle ne date que de quelques années—ira en s'accroissant grâce à l'amélioration des tests d'orientation professionnelle, grâce à la plus grande attention portée aux dossiers des élèves, grâce aux exigences universitaires et grâce au rendement louable qu'elle a donné jusqu'ici. Les élèves, qui se présenteront à l'Université pour les études dentaires, seront donc mieux préparés à absorber cet enseignement.

De toute façon, il se fait un travail gigantesque dans l'élaboration des curricula classiques, travail qui ne peut qu'améliorer le produit fini, le dentiste. Parlons maintenant du corps professoral d'une faculté dentaire, en l'an de grâce 1976.

Les professeurs d'une faculté dentaire, comme de toute autre école professionnelle, seront devenus des professeurs de carrière, c'est-à-dire, des dentistes qui consacreront tout leur temps et tous leurs loisirs à l'enseignement.

Ces professeurs ne seront plus des pédagogues improvisés, mais des personnes formées aux grandes disciplines pédagogiques modernes. Ces professeurs auront les loisirs indispensables à la lecture, à la recherche, et à la rédaction

de travaux scientifiques. Ils recevront des honoraires qui leur enlèveront toute préoccupation matérielle et ils travailleront dans une ambiance et dans des conditions favorables à l'éclosion de leur talent.

Les professeurs qui m'entendent ici m'accuseront d'utopie et croiront que je rêve tout haut. Ce rêve est beaucoup plus prêt de la réalité qu'on ne croit et pour s'en convaincre, on n'a qu'à lire les rapports des revues sur la préoccupation du gouvernement américain, en face de la pénurie de professeurs de toutes les sphères d'activité intellectuelle.

Pour s'édifier, on n'a qu'à consulter le mémoire de la Canadian Association of University Teachers à la Commission Royale des Prévisions Economiques du Canada, présenté en mars 1956. Ce mémoire, intitulé "The University Teacher and the Crisis of Higher Education in Canada" définit le rôle du professeur dans l'économie canadienne et les conditions essentielles à l'accomplissement de ce rôle. Dans ce mémoire, on réclame, en se basant sur des statistiques évidentes, des conditions de travail plus favorables à l'éclosion de la carrière de professeur.

Mais il ne faut pas se leurrer! Le gouvernement, par le truchement de l'Université, en fournissant au personnel enseignant une ambiance plus agréable sous tous les rapports, se montrera plus exigeant dans le choix de ses professeurs, leur exigera une formation plus poussée et leur demandera un rendement supérieur. C'est normal. Les professeurs de l'avenir devront avoir une solide formation pédagogique, c'est-à-dire qu'ils devront voir reçu une formation en sciences pédagogiques, comme l'instituteur du cours primaire et comme la recevront tous bientôt les professeurs de cours classique. Actuellement, on exige des professeurs laïques qui sont embauchés dans nos collèges, leur diplôme d'école normale. Il en sera ainsi probablement dans l'avenir pour les études universitaires. On demandera à ceux, qui se destinent à l'enseignement, une formation pédagogique qui leur sera donnée

par une faculté de pédagogie de l'Université (School of Education dans les Universités anglaises ou américaines). On ne s'improvise pas professeur, pas plus qu'on s'improvise dentiste, du jour au lendemain. C'est ce qu'ont compris certains dirigeants du domaine éducationnel et on assiste un peu partout à des essais dans ce sens. L'automne dernier, l'A.D.C. organisait, à Toronto, une réunion de trois jours pour les professeurs des facultés dentaires du pays, où ont été discutés les grands principes de pédagogie dans une école professionnelle faisant partie d'une Université. Encore, cet été, la Fondation Kellogg invite un professeur de chaque faculté dentaire du continent pour y suivre un cours de pédagogie, à Ann Arbor.

Il y a des ébauches, ici et là, d'une prise de conscience pédagogique et on peut prédire, sans se tromper, que, très bientôt, les professeurs d'Université auront cessé d'être uniquement des cliniciens pour devenir des pédagogues avertis. J'ai parlé brièvement des futurs élèves et des futurs professeurs. Disons juste un mot des tendances à l'enseignement lui-même.

Le problème crucial de l'enseignement dentaire moderne se trouve dans l'intégration des sciences fondamentales (qu'on appelle science de base) au domaine clinique.

On peut situer ainsi le problème: les élèves actuels reçoivent, au cours de leurs premières années, un enseignement poussé dans les sciences médicales, telles que l'anatomie, la physiologie, l'endocrinologie, l'histologie, la microbiologie, la pathologie, la pharmacologie et j'en passe. Et dans la deuxième partie de leur cours ils reçoivent un enseignement clinique, ou une formation pratique, dentisterie opératoire, prothèse, couronnes et ponts, chirurgie, anesthésie, périodontie, etc., qui n'a pas de relation directe avec les notions scientifiques de leurs premières années d'enseignement.

Il y a donc un fossé à combler entre le domaine scientifique de base et le domaine scientifique clinique. Les professeurs de la première heure ne saisissent

pas suffisamment l'aspect dentaire de leur enseignement et ceux de la dernière heure ne parlent pas le même langage que ceux qui ont construit les assises. Le problème ne se trouve pas seulement ici à Montréal, il existe partout où il y a des facultés dentaires.

On cherche des solutions. Une de celle-ci se trouve dans le fait de confier l'enseignement des sciences de base à des dentistes, qui comprennent mieux l'application pratique de leur enseignement. C'est ce que tente de faire la faculté de chirurgie dentaire de l'Université de Montréal.

Une autre solution consiste à renseigner les professeurs de sciences de base sur les aspects dentaires de leur domaine et à les incorporer plus intimement à la clinique. Une autre solution exige que les professeurs des sciences cliniques connaissent aussi bien que leurs élèves les notions des sciences fondamentales. Mais là, on se heurte à des lacunes de temps et de facilités.

Partout on cherche à régler ce problème et au mois d'avril dernier, on convoquait à cette fin une réunion de tous les universitaires intéressés. On attend avec beaucoup d'intérêt la publication des rapports de ce symposium.

L'enseignement lui-même est en train de varier ses formules. Autrefois, le professeur s'asseyait à sa tribune et présentait une leçon à ses élèves. Souvent aussi il leur fournissait un résumé de la matière de ses cours. Aujourd'hui — et dans l'avenir, cette tendance ira en s'accroissant — on demande à l'élève une participation beaucoup plus active à l'enseignement. Grâce aux séminaires, l'élève doit lire, préparer lui-même une tranche de la matière, donc faire un effort personnel qui est beaucoup plus productif.

Il s'incorpore lui-même à l'enseignement; il apprend chez les auteurs des

théories et des techniques, qui ne sont pas nécessairement celles de son maître; il est donc préparé à la discussion et — par expérience psychologique — on sait comment les discussions entre groupes sont propices à faire naître des idées qu'on a pas eues durant la réflexion solitaire.

La formule de l'enseignement de l'avenir consistera donc dans un travail plus personnel de l'élève, grâce aux séminaires ou autres techniques pédagogiques du même genre.

Les examens aussi sont voués à des modifications importantes. Dans l'avenir, le rendement quotidien de l'élève fera foi de son travail d'acheminement vers le doctorat. Les examens auront comme rôle de critère pour s'assurer non pas de la science livresque ou mémorisée de l'élève, mais pour s'assurer de l'assimilation qu'il aura faite de cette science. Ainsi, les examens pratiques du doctorat, durant lesquels se donnent rendez-vous trop de facteurs contingents et indépendants de la volonté des étudiants, pour que ces examens soient véritablement un test de leur valeur, ces examens pratiques de doctorat, donc, seront remplacés par une soutenance de thèse, où l'élève exposera à ses examinateurs sa conception et sa compréhension des données scientifiques qu'il a puisées à l'Université.

Enfin, la faculté dentaire restera autonome, c'est-à-dire qu'elle ne sera pas incorporée dans une faculté médicale. A la suite du docteur Gies, dans son rapport à la Fondation Carnegie, à la lumière des expériences de l'Université Harvard, à la vue des hésitations et des tendances des stomatologistes et des dentistes de France, je crois, pour des raisons qu'ils serait trop long d'énumérer ici, qu'il est préférable qu'une faculté dentaire conserve son entité propre, qui la distingue d'une faculté de médecine.

L'Association dentaire canadienne

par A. GERALD RACEY, Montréal.

On m'a prié de vous entretenir de certaines questions que l'Association dentaire canadienne considère comme importantes pour l'avenir de notre profession. Je n'ai pas l'intention de vous apporter des solutions toutes faites; depuis longtemps, des problèmes se posent et l'Association, malgré tout son travail, n'a pas encore réussi à y trouver des réponses adéquates. Souvent, on ne peut résoudre ces problèmes, parce que nous vivons à une époque où tout change rapidement. Une solution, qui nous semble bonne, aujourd'hui, ne le serait plus dans un an ou plus tôt. Il faut donc que l'Association soit constamment en alerte pour surveiller les intérêts de la dentisterie et cette surveillance s'impose aujourd'hui plus que jamais.

Les gouvernements s'intéressent de plus en plus aux questions qui relèvent des services de santé et, dans certains cas, ils exercent un contrôle et administrent même ces services, y compris les services dentaires. Le gouvernement s'attend à recevoir de nous des renseignements sur notre profession et c'est ce à quoi s'occupe l'Association, en y consacrant beaucoup de travail et de temps. Il faut donc amasser des statistiques précises pour s'en servir à l'occasion. Cette insistance manifestée par le gouvernement est suscitée par l'intérêt que prend le public aux choses de la santé. Un service de découpages de journaux, auquel nous sommes abonnés, nous permet de nous rendre compte que l'intérêt du public pour les questions dentaires augmente de mois en mois.

Personnel auxiliaire

Depuis la dernière guerre, on réclame de partout l'augmentation de notre personnel auxiliaire. Le gouvernement fédéral et des gouvernements provinciaux ont proposé à notre profession des systèmes d'hygiénistes dentaires, dont l'esprit s'apparente fort à l'organisation que

possède la Nouvelle-Zélande. On s'est toujours opposé à des systèmes du genre, parce que les enfants ont besoin de services préventifs et que ces soins ne peuvent leur être donnés que par des dentistes dûment qualifiés. On a même répondu à ces avances en disant qu'il vaudrait mieux, à la longue, confier le traitement des adultes à ces assistantes dont la formation est incomplète, plutôt que de leur demander de traiter les enfants.

Il fallait quand même prendre une attitude positive et nous avons suggéré l'emploi d'hygiénistes dentaires. Là, on s'est buté à des difficultés pour l'organisation des cours pour ces jeunes filles; jusqu'à maintenant, on n'a qu'un de ces cours qui est donné à Toronto. Entre-temps, le gouvernement nous menace de nous imposer des assistantes du genre de celles de Nouvelle-Zélande; il nous faut donc former au plus vite des hygiénistes en plus grand nombre. Et cette question se rattache à nos tentatives d'agrandir nos facultés dentaires. A mon avis, en solutionnant le problème des hygiénistes, nous réglerons du même coup d'autres questions qui assaillent notre profession. En effet, les fonctions des hygiénistes cadrent bien dans tout programme d'exercice dentaire et d'hygiène dentaire publique. Nous avons surveillé de près des cabinets qui utilisent les services d'hygiénistes dentaires et nous avons été émerveillés de leur rendement, tant au point de vue économique qu'au point de vue efficacité. Il faut évidemment que le dentiste qui retient les services d'un hygiéniste puisse compter sur une clientèle abondante; mais, si tel est le cas, un hygiéniste donne au bureau un élan inappréciable. Le dentiste peut recevoir un plus grand nombre de patients et est aussi soulagé d'une somme de travail accaparant. Nous sommes persuadés que le cabinet de l'avenir comprendra une hygiéniste, une assistante et une secré-

taire, si la clientèle le permet: ce sera alors d'une nécessité économique.

Techniciens dentaires

La question des techniciens cause beaucoup de soucis à la profession dentaire. Depuis des années, nous combattons des projets de loi que présentent des techniciens malhonnêtes aux législatures provinciales. Actuellement, deux gouvernements provinciaux étudient le status des techniciens. La chose est devenue un ballon politique et la publicité entreprise par les techniciens hors la loi met la profession dentaire de plusieurs provinces dans une situation fâcheuse.

Assurance-santé

Le problème d'assurance-santé s'offre encore à vous dans toute son acuité. Il y a une quinzaine d'années, on a commencé à s'inquiéter à son sujet. A cette époque, il fallait décider si nous collaborerions ou non avec le gouvernement et notre décision fut qu'il valait mieux marcher avec lui et aussi connaître ses intentions, plutôt que de s'y opposer et ainsi ignorer ce qu'il se proposait de faire. Un projet de loi fut rédigé et nous avons pu y incorporer le plan que nous favorisions. Il faut dire, qu'à ce moment, l'Association n'avait pas de notions bien précises sur l'assurance-santé, les services étatisés et les plans nationaux de santé; mais, avec le temps, l'A.D.C. a beaucoup appris et il s'est avéré que le projet qu'elle avait soumis était meilleur qu'elle ne l'avait réalisé. Ce plan insistait sur des services de prévention pour les enfants, et il en est de même encore aujourd'hui.

Depuis cette époque, le gouvernement fédéral a souvent changé d'idées. Notre comité d'étude sur l'assurance-santé a scruté attentivement toutes les organisations de santé des différents pays et a réussi à obtenir des renseignements au sujet du côté dentaire de ces plans, renseignements que ne possèdent pas les autorités fédérales. Ce travail a progressé sans bruit jusqu'à ces derniers

mois, quand le gouvernement a de nouveau mis la question au premier plan. Mais, aujourd'hui, tout semble mêlé. Après la première excitation, le ministère se mit sérieusement à l'étude du problème et décida que tout système national de services de santé devrait être appliqué par phases successives. Plus récemment, les provinces, qui n'avaient pas abordé l'étude de ce problème avec tout le sérieux nécessaire, ont prétendu vouloir l'établissement immédiat d'un système complet de santé. C'est ce que prétendaient, il n'y a pas si longtemps, plusieurs ministres provinciaux, mais depuis qu'ils en ont réalisé le coût, ils parlent beaucoup moins fort.

Depuis plusieurs années, des personnes autorisées, qui font partie des services fédéraux de santé, nous répètent qu'un plan d'assurance-santé sera établi progressivement et que le gouvernement d'Ottawa fournira à lui seul presque tout l'argent nécessaire à son fonctionnement. Là, il nous semble, se trouve la vérité et le gouvernement fédéral réalisera certainement ses intentions. Nous sommes d'ailleurs entrés dans la réalisation d'un plan d'assurance-santé, depuis 1948, quand le gouvernement a commencé à donner des octrois pour la santé publique. Dans l'ensemble, ces octrois ont servi à construire des hopitaux, qui s'édifient encore partout au pays; ils ont été utilisés à former du personnel dans certains domaines fondamentaux à la santé et à combler plusieurs autres lacunes incompatibles avec l'établissement d'un plan d'assurance-santé. La deuxième phase fut l'organisation de services de diagnostic, dont prenait soin le budget d'il y a deux sessions. Nous en sommes à ce stage. Le prochain pas sera vers l'hospitalisation et on entend actuellement beaucoup d'idées exposées quand à son application pratique. Tout avance graduellement et les journaux nous en rapporte les échos. Les dentistes semblent se désintéresser de la question, parce que, disent-ils, ils ne sont pas encore directement touchés par ces discussions. Toutefois, on nous dit que le gouvernement s'occupera des traitements médicaux dès que le problème de l'hospi-

talisation aura été réglé. La cinquième phase s'occupera des soins dentaires. La chose est patente; elle est dans les plans du gouvernement. N'attendons pas qu'elle nous assaille. Préparons nous de notre mieux.

Relevés

Dans le passé, des chiffres fournis par un ou deux représentants d'une profession étaient acceptés sans discussion. Il n'en est pas de même aujourd'hui. Il nous faut maintenant des statistiques exactes et il faut même spécifier comment ont été obtenus ces chiffres. De nos jours, des statistiques qui n'ont pas été recueillies avec des méthodes scientifiques ont peu de valeur.

C'est pourquoi, pour bien protéger la profession, l'Association dentaire canadienne a dû faire appel à des experts et utiliser leurs méthodes. Ces relevés sont constitués par des chiffres que vous nous donnez et non pas ceux que l'Association ou d'autre imagine. L'an dernier, nous avons fait une enquête portant sur l'économie de la profession dentaire. Avant de le faire, nous avons fait approuver notre questionnaire par le Bureau fédéral des Statistiques pour que nos chiffres soient acceptables. Les statistiques que nous avons compilées ont été utilisées en plusieurs circonstances et elles le seront encore jusqu'à ce que nous en amassions de nouvelles. Le gouvernement fédéral publie tous les ans des statistiques au sujet des revenus, mais ces statistiques sont généralement celles de quelques années en arrière. Celles qu'a publiées le gouvernement en 1955 sont en réalité celles de 1953, de l'année où l'A.D.C. a recueilli les siennes. Les chiffres publiés par le Bureau de Statistiques au sujet des dentistes correspondent parfaitement à ceux de l'Association. Ce fait consolide notre position auprès du gouvernement. Le questionnaire expédié à tous les dentistes, en 1953, demandait le nombre de patients traités durant une année. Cette question, pour y fournir une réponse exacte, exigeait beaucoup de recherches. Et,

pourtant, cette question avait beaucoup d'importance. Depuis longtemps, le Comité d'Etude sur l'Assurance-Santé se posait précisément cette question. Par exemple, il y a deux ou trois ans, on avait institué à Ottawa un plan d'assurance-santé qui exigeait que les dentistes, pour qu'ils traitent à fond les enfants, reçoivent à leur bureau 27 enfants par jour. Ce nombre paraissait bien normal aux auteurs du plan, qui, va sans dire, n'étaient pas dentistes et il fallut beaucoup de temps pour que nous réussissions à changer leur avis. Le relevé de l'A.D.C. indiquait que le dentiste, en moyenne, reçoit à son bureau environ 1070 patients par année, ce qui veut dire une moyenne de 3.6 patients, par jour. Cet aspect de la question est des plus importants, car, dans le plan dont je viens de parler ou dans tout autre plan, il engage l'économie future de notre profession et il ne faut pas que nous soyons liés par ce calcul de 27 enfants par jour.

Il faut employer plusieurs méthodes pour compiler des statistiques; il nous faudra entreprendre des enquêtes et nous souhaitons recevoir votre collaboration. Il n'y a pas longtemps, vous receviez un questionnaire sur l'anesthésie, dont le but était d'établir des faits touchant ce domaine. Car, vous n'êtes pas sans savoir, qu'en certains milieux, on fait un peu de difficulté aux dentistes au sujet de l'anesthésie. Les renseignements que nous avons reçus nous aideront à corriger cet état de choses.

Un autre problème qui confronte la profession est le nombre relativement petit des praticiens. Un premier ministre provincial disait récemment qu'il avait l'intention de faire venir d'Europe des dentistes pour prendre soin de la population. Pratiquement tous les gouvernements du Canada nous ont demandé depuis quelques années d'augmenter le nombre des dentistes. Au cours des dernières douze années, nous avons fourni à ces gouvernements des statistiques et des mémoires qui leur indiquent que la situation ira toujours en s'aggravant, jusqu'à ce que les universités puissent

recevoir un plus grand nombre d'élèves. En un mot, pour corriger cet état de choses, il faut plus d'argent! La situation était bien décourageante jusqu'à ces derniers mois, et la situation est loin d'être réglée.

Nous avons fourni des statistiques et des détails sur la construction d'écoles dentaires à six universités au cours des six dernières années. Trois de celles-ci, Dalhousie, Toronto et Colombie Britannique commencent à bouger. Dalhousie a annoncé que la construction d'un édifice plus spacieux, que celui qu'elle a présentement, doit commencer en mars. Toronto a terminé ses plans et le financement de son entreprise est presque complété. La Colombie Britannique a embauché un homme, ces derniers mois, pour étudier le projet et commencer des plans.

La proportion du nombre des dentistes en rapport avec celui de la population s'aggrave d'année en année. Elle ne pourra s'améliorer qu'à la condition d'avoir plus de diplômés, chaque année. A peine le nombre de nouveaux dentistes comble-t-il les vides créés par les morts et les retraites. Et les taux des morts et des retraites iront en augmentant, parce que la moyenne d'âge des dentistes canadiens est assez élevée. Même si nous avions de nouvelles écoles dentaires, aujourd'hui, il nous faudrait attendre cinq ou six ans avant que nous puissions disposer de nouveaux dentistes. Il faut y songer. Nous manquons actuellement de dentistes et le gouvernement veut établir pour la population un plan d'assurance-santé! Ces deux faits sont inconciliables.

Pour assurer nos positions, il nous a fallu combattre une foule de suggestions qui nous venaient de gens étrangers à la profession dentaire. C'est ainsi qu'on nous a proposé de confier à des personnes partiellement qualifiées une partie de notre travail. Plusieurs remèdes nous ont été proposés et, la plupart du temps, on voulait que nous donnions à des jeunes filles des cours de neuf mois pour leur permettre d'obturer des dents. Une des raisons pour lesquelles les gouvernants tendent une oreille attentive aux techni-

ciens, qui veulent exercer la prothèse, se trouve précisément dans cette lacune dans le nombre des dentistes au Canada. Une profession se porte certes mieux, quand elle a un léger surplus dans le nombre de ses membres.

Fluoruration

Malgré des pressions exercées sur l'Association, celle-ci a attendu plusieurs années avant de se déclarer officiellement en faveur de la fluoruration. Le Comité des Recherches de l'A.D.C. a étudié et continue d'étudier tout le travail qui a été accompli dans ce domaine. La première déclaration favorable à cette mesure a été faite par l'Association à sa réunion annuelle de 1952, à Vancouver. Après avoir accordé son support, l'A.D.C. adopta la politique de fournir des renseignements précis sur cette question à tous ceux qui en demanderaient. Elle a publié deux fascicules: l'un "Facts" constitué de questions et de réponses à l'usage du public, l'autre, plus considérable, intitulé "Facts on Fluoridation", à l'usage des dentistes et de ceux qui avaient à parler du sujet en public. Ces publications sont revisées de temps à autre. Les gouvernements, les Sociétés dentaires et divers organismes profanes en ont acheté des milliers d'exemplaires.

Une chose est certaine: on ne peut accuser la profession d'égoïsme, quand elle recommande cette mesure. Toutes les raisons qu'on a invoquées contre la fluoruration ont été analysées à fond et dans aucun cas on a retrouvé des principes scientifiques pour les justifier.

La fluoruration a été l'objet de recherches plus qu'aucune autre mesure de santé publique. On n'a jamais pu établir qu'elle occasionnait des désordres organiques, même dans des cas où l'eau contenait une fort plus grande quantité de fluor que celle qui est recommandée. Le Créateur a voulu que l'eau de consommation contienne des sels minéraux et, en fait, elle en contient. Et la majorité des eaux potables contiennent une certaine proportion de fluorure.

Certaines constatations parlent d'elles-mêmes. On peut, grâce au fluor, prévenir 60% de la carie dentaire. Au point de vue économique, on se représente ce que cela signifie. Si on songe au nombre restreint de dentistes, la fluoruration exercera là aussi son influence. L'état dentaire des prochaines générations s'améliorera grâce à cette mesure, qui, en somme, est toute simple.

Si la profession dentaire s'y objectait, on pourrait plus facilement comprendre certaines accusations. C'est l'affaire d'une profession de nuire à ses affaires, quand l'intérêt du public est en jeu! Le public cependant ne comprend pas ces principes. La science a prouvé que la fluoruration est une mesure saine et, à la fin, tout le monde en retirera du bénéfice. Cependant, il ne faut pas pour tout cela relâcher nos efforts.

J'ai parlé des problèmes les plus urgents de l'heure et j'ai souligné l'importance qu'une profession doit accorder aux questions fondamentales qui lui donne son status. Il y a la question des recherches. Il faut qu'une profession s'occupe activement de recherches, si elle veut prendre sa place au soleil. Avant 1940, on ne dépensait pas plus que cinq milles dollars pour les recherches dentaires au Canada. L'Association dentaire canadienne a réussi à faire approuver un comité associé au Conseil National des Recherches, quoiqu'en certains milieux, on s'y était fort opposé. Quand ce pas fut fait, on s'aperçu qu'on ne pouvait pas utiliser l'argent qu'on mettait à notre disposition. En effet, pour obtenir des octrois de recherches, il faut disposer de l'installation et du personnel nécessaires. On pouvait toujours entreprendre des recherches dans les Universités, mais nous n'avions pas d'individus qualifiés en sciences de base. Pour parer à cette lacune, l'A.D.C. a créé des bourses d'étude pour aider des dentistes à acquérir un entraînement propre à ce genre de travail. Presque toutes les recherches entreprises aujourd'hui, au pays, le sont par des chercheurs formés grâce à ces bourses d'études. L'an dernier, on a dépensé au delà de \$160,000.00 pour des

recherches dans le domaine dentaire. Le cas des recherches montre comment il faut prévoir à l'avance, quand on veut obtenir des résultats tangibles.

Après avoir fait l'objet des pourparlers durant une vingtaine d'années, l'Association a finalement réussi à installer son secrétariat dans un édifice bien à elle, à Toronto. Cette réalisation a été rendue possible grâce à un exprit extraordinaire de collaboration. On prit la décision, à une réunion annuelle de l'A.D.C., d'acheter un édifice, quand on aurait en main une somme de \$40,000. Six semaines plus tard, l'Association avait en caisse \$58,000. Nous prétendons faire partie d'une profession scientifique, il faut donc le montrer. De l'avis de quelques-uns, il nous fallait organiser une bibliothèque dans notre secrétariat. A ce moment, l'Exécutif était préoccupé à financer l'achat de l'édifice; on suggéra donc de mettre sur pied la bibliothèque, non à l'aide des fonds de l'Association, mais par une souscription. On n'a jamais entrepris officiellement de campagne de souscription et, pourtant, on a réussi à acheter tous les volumes récents qui traitent des sciences dentaires, grâce seulement à des dons que l'Association a reçus de ses membres. En ce faisant, les dentistes canadiens ont montré leur fierté d'appartenir à leur profession. Durant la dernière semaine de 1955, des dentistes ont fait parvenir aux fonds de la bibliothèque une somme de \$1,075.00, sans aucune sollicitation.

Il faut qu'une profession publie des imprimés de diverses natures pour s'affirmer dans le public. Le Journal de l'Association dentaire canadienne est une entreprise d'envergure, puisqu'il représente une dépense d'environ \$60,000, par année. La publicité rapporte au journal environ \$45,000.00 et l'Association absorbe la perte, qui reste. Le journal est expédié dans toutes les parties du monde et ainsi la profession dentaire canadienne est connue et estimée à la valeur de ses articles, qui paraissent dans son organe officiel. L'Association publie en plus des fascicules et des pamphlets de toutes sortes. A cause de l'augmentation constante des frais

d'impression, l'Association a crû bon d'installer, dans le sous-sol de son édifice, une presse pour imprimer son matériel; l'A.D.C. peut ainsi publier une plus grande quantité et un plus grand nombre d'imprimés, qu'elle vend à prix coûtant. Ses acheteurs les plus importants sont les Ministères de santé qui se procurent ainsi des publications à meilleur compte qu'ils ne pourraient eux-mêmes les produire.

Toutes ces activités sont nécessaires pour maintenir la profession dentaire au niveau qu'elle doit occuper. Il nous faut avancer constamment, sinon nous perdrons du terrain. Depuis quelques années, certains de vos confrères de plus en plus nombreux consacrent de leur temps, du travail et de leur argent à faire progresser votre profession. Pas un seul reçoit un salaire; seules leurs dépenses sont payées. N'oubliez pas qu'un bureau sans dentiste

est un bureau sans revenu et pourtant, des dirigeants de l'Association et des présidents de comités consacrent trois ou quatre mois de leur année au service de l'A.D.C. Je souligne ces faits, parce que parfois des dentistes, qui ne sont pas au courant de ces choses, font des critiques désagréables. En terminant, permettez-moi de faire une ou deux remarques. Je disais au début que nous vivons dans une époque où tout change constamment. Ce qui est vrai pour la dentisterie l'est aussi pour les autres services de santé. Il faut que la profession dentaire possède des organismes solides à tous les degrés, national, provincial et municipal. Cette détermination exige des efforts parsemés parfois de découragements. Il se peut que nous perdions du terrain en certaines circonstances, mais il nous faut quand même aller de l'avant vers l'objectif qu'on s'est fixé.

Le Collège des Chirurgiens-Dentistes de la Province de Québec

par REMY LANGLOIS, Québec.

Je tiens d'abord à remercier le docteur de Montigny de m'avoir invité à vous entretenir pendant quelques instants du Collège des Chirurgiens-Dentistes de la Province, ou plutôt de sa politique à venir et ceci dans les deux prochaines décades.

Point n'est besoin de vous dire qu'en développant ce sujet, je ne ferai que présenter mes opinions personnelles et un peu des idées qui ont cours à l'heure actuelle dans le district de Québec, que je représente comme Gouverneur.

Mais comme tel, je ne veux, en aucune façon engager la responsabilité du Collège.

Il est un problème qui semble à l'ordre du jour chez-nous, et j'ai nommé la pra-

tique illégale. Pour le résoudre, jusqu'ici, nous avons eu recours à la police et la justice. Sont-ce là les seuls moyens à notre disposition? Je ne le crois pas, si je me base sur les résultats obtenus à date. Nous avons dépensé des sommes assez élevées, pour l'enrayer, et cependant, elle existe toujours et ne semble en aucune façon vouloir s'atténuer. Les juges du district de Québec, récemment, ont émis l'opinion que la seule façon de l'enrayer, serait la prison, sans option d'amende. Je ne prétends pas ici qu'on ne doive pas sévir contre les délateurs, et même leur faire sentir qu'ils sont constamment surveillés, mais je crois qu'il y a aussi d'autres méthodes à employer. J'ai

nommé le nettoyage chez-nous, l'éducation de nos futurs confrères et l'éducation du public.

Le nettoyage chez-nous.

Toute vérité n'est pas bonne à dire, mais il vient un temps où il faut savoir l'envisager. Ne sommes-nous pas bien responsables de l'état de choses actuel? Nous avons tous prêté serment de pratiquer notre profession suivant l'étiquette professionnelle et dans le meilleur intérêt de la santé publique. Beaucoup semblent malheureusement avoir oublié ce serment et n'évaluent leurs services qu'en piastres et cents. Il est beaucoup plus payant de faire des avulsions dentaires et des prothèses que de faire de la dentisterie opératoire. C'est même beaucoup moins fatigant. Mais donnons à notre patient ce qu'il attend de nous. Le patient vient à notre cabinet de travail en toute confiance. Cependant (je suis généreux), dans 50% des cas, on le trompera malheureusement en lui donnant des conseils absolument contraires à son meilleur intérêt, j'ai nommé des avulsions dentaires complètes et des prothèses, lorsqu'il n'y a pas lieu. Ou encore, on pratiquera des obturations ou restaurations que je n'oserais même pas qualifier ici. Par ces façons de procéder, nous perdons la confiance des patients et les dirigeons infailliblement chez les techniciens. Vous le savez comme moi, le public a tendance à généraliser et la bêtise et la malhonnêteté de quelques uns retombent sur la profession en général. Il incombera donc au Collège, ceci m'est bien pénible à dire, il lui incombera, dis-je, de sévir contre ces confrères qui déshonorent notre profession et d'organiser un système pour leur faire sentir qu'ils sont constamment surveillés. Le Collège devrait même, je crois, établir une liste d'honoraires professionnels, honoraires qui seraient connus des jeunes, qui commencent, ainsi que des autres confrères. Ceci mettrait tout le monde sur un même niveau et permettrait une concurrence juste et légitime. Celui-ci commettrait un acte dérogatoire

à la profession, qui chargerait un prix inférieur à ceux préconisés. Car, à l'heure actuelle, les jeunes praticiens semblent vouloir se bâtir une clientèle en chargeant des prix dérisoires et en exécutant, pour cause, des travaux qui sont absolument indignes d'un dentiste. Ceci m'amène à considérer ce qui devrait être préconisé dans:

L'éducation du futur praticien.

Le Collège, en collaboration avec les Universités, devrait rédiger un nouveau code d'étiquette professionnelle que l'on enseignerait à fond à l'étudiant. En faire une branche de toute première importance, et non de cinquième ordre, tel qu'il existe à l'heure actuelle.

Insérer dans ce code.

1—La nécessité qu'il y a pour tout dentiste de conserver les dents, dans la mesure du possible.

2—Exécuter pour son patient des travaux de reconstruction parfaits.

3—Relations d'honnêteté envers son patient. Se rendre responsable de son ouvrage; si nécessaire, le reprendre à ses propres frais. Tout homme peut se tromper et il n'y a pas de honte à le reconnaître, plutôt que d'essayer de leurrer son patient, ou encore lui charger une seconde fois pour reprendre un ouvrage que nous avons manqué, et dont il n'est nullement responsable.

4—Relations générales du dentiste avec son patient dans son cabinet de travail.

5—Règlements relatifs à la propreté, l'hygiène et au bon maintien d'un bureau.

6—Liste d'honoraires reconnus et raisonnables qui pousseront le dentiste à accomplir un travail de premier ordre, parce que convenablement rémunéré.

7—Code existant au Barreau, qui régit la conduite des membres d'une profession; dans ses relations sociales en dehors de son bureau.

Je n'ai fait ici que sommer quelques idées générales, mais que de choses pourraient être ajoutées. Nous éliminerions de cette façon des sujets indignes de notre profession et en rehausserions par le fait même le niveau, qui, malheureusement, je dois l'admettre, a tendance à baisser.

L'éducation du public.

Le Collège, de concert avec les Universités et toute la profession, devrait exercer

une pression sur notre Gouvernement, quel qu'il soit, pour qu'il prenne charge du programme d'éducation en hygiène dentaire auprès du public. Car c'est au Gouvernement qu'il appartient de dépenser l'argent nécessaire pour renseigner le public de la Province sur l'hygiène dentaire. Le Gouvernement s'est lancé dans la lutte contre la tuberculose et vous savez comme moi ce qui en est résulté. Après la tuberculose, le cancer. Pourquoi ne pas ajouter un autre fléau, la carie dentaire.

L'éducation du public peut et doit se faire dans nos bureaux. Il est étonnant de constater le bien que nous pouvons accomplir en éduquant nos patients, qui, à leur tour, éduqueront leurs parents et amis et ceci deviendra une chaîne sans fin.

L'éducation du public par l'image ou la télévision. La réaction à ces programmes doit être la même ici qu'à Québec. Mes amis, le public est en alerte depuis qu'il regarde les programmes de "C'est la vie", plus spécialement ceux qui nous concernent. Nombre de patients se sont présentés à nos bureaux, qui ne l'auraient jamais fait. Non contents de venir nous voir, ils veulent se renseigner davantage et ne cessent de nous questionner sur différents aspects de notre profession. Ces programmes ont atteint la masse du public et ont causé, j'en suis sûr, plus de tort à la pratique illégale que toutes les poursuites que nous avons intentées à date. Le public est en alerte; il en demande davantage. Ne le laissons pas tomber, mais songeons plutôt à parfaire son éducation.

Que le Collège, l'an prochain, organise environ six programmes de télévision, qui seraient pleinement appréciés par le public.

Le Collège devrait, dans ces programmes, parler de fluoruration de façon à forcer le Gouvernement et nos municipalités par la demande du public; de les forcer, dis-je, à installer la fluoruration dans de nombreuses et diverses localités. Ainsi un plus grand public et non une petite agglomération limitée jouira de ses

bienfaits, et ceci apportera une diminution considérable dans le taux d'incidence de la carie dans notre province.

Il ne me reste plus qu'à vous parler de l'assurance-santé pour le dentiste. Elle vous arrivera peut-être, dans un avenir éloigné, ou rapproché. Mais il nous faut tout de même nous y préparer. Le Collège a prévu ses développements, car il a nommé un représentant, en l'occurrence votre humble serviteur, sur le comité d'Assurance-Santé de l'Association dentaire canadienne. Et j'ai pensé que ce soir, il vous intéresserait de connaître les principes révisés à l'égard des services dentaires.

L'Association dentaire canadienne reconnaît qu'il existe un besoin impérieux d'améliorer la santé des dents et désire coopérer de façon constructive à solutionner ce problème national, en autant que l'on adhèrera aux principes suivants:

1—Qu'un programme bien établi et continu de l'éducation en matière d'hygiène dentaire soit organisé.

2—Que les fonds nécessaires soient prévus pour encourager et supporter les recherches.

3—Que l'on fasse une place prédominante à la dentisterie de prévention plutôt que la dentisterie de restauration.

4—Que les patients soient traités dans les bureaux privés, excepté dans certains cas, où il serait préférable de ne pas le faire.

5—Que l'on intervienne pas dans les développements et les progrès des standards de la profession.

6—Que seuls les dentistes pleinement qualifiés puissent adhérer à ce plan.

7—Que le patient ait le libre choix de son dentiste. Mais que le dentiste, par ailleurs, se réserve le droit de le refuser pour des raisons géographiques, professionnelles, ou autres.

8—Que les services dentaires soient rendus par des dentistes en pratique générale, mais que, par ailleurs, ils puissent référer leurs patients, si besoin il y a.

9—Que l'on laisse à la profession dentaire la prérogative de déterminer quels seront les besoins pour les services dentaires.

10—Que la profession dentaire soit adéquatement représentée auprès des autorités ou commission coordinatrices de l'assurance-santé, sur le plan dentaire.

11—Pour que la profession soit maintenue à son plus haut niveau.

(a) Que l'on prévoit des facilités d'enseignement pour développer un nombre toujours croissant de gradués.

(b) Que l'on prévoit des facilités d'enseignement clinique dans les facultés dentaires et hôpitaux.

(c) Que l'on prévoit des cours post-gradués pour les dentistes, et cela à de fréquents intervalles.

12—Méthode de paiement.

(a) au dentiste

(b) par le patient (contributoire)

13—Que les dentistes jouissent d'être admis dans les hôpitaux et d'être responsables de leurs patients.

14—La limite d'âge ne dépasserait pas seize ans.

15—Administration par une Commission sur laquelle siègeraient des dentistes représentant et nommés par la profession.

L'exercice du praticien

par JEAN-PAUL LUSSIER, Montréal.

Mauriac nous dit quelque part: "L'homme ne possède à aucun degré le don de prophétie et le destin est toujours inattendu." C'est incontestable et nous l'admettons tous. On peut quand même avec une certaine probabilité évaluer la position d'un phénomène dans son évolution, si, par le passé, on a suivi sa progression pendant une période suffisamment étendue. En partant de ce principe, nous pouvons faire le rapport de ce que nous étions vingt ans passés, faire le point où nous sommes aujourd'hui et, de par la trajectoire issue de ces deux points, extrapoler pour une période de vingt ans dans le futur.

En 1936, à l'époque où les anesthésistes des hôpitaux se rendaient responsables de bien plus de décès que les chirurgiens eux-mêmes, où les belles du faubourg Québec s'enorgueillissaient de leur dentier de vulcanite aux dents de porcelaine opaque, où l'incurabilité des maladies vénériennes donnaient aux moralistes un fort argument en faveur de la justice immanente, où la pneumonie et les fièvres puerpérales étaient trop souvent fatales, le dentiste remplissait ses fonctions avec le bagage de techniques chirurgicales, anesthésiques et prothétiques qu'il avait hérité des décades précédentes.

A partir de 1937, on assiste à l'avènement des sulfamides, des antibiotiques, de la radioactivité artificielle et de bien d'autres découvertes qui viennent révo-

lutionner la physique, la chimie, la biologie, la chirurgie et la thérapeutique médicale et dentaire. Vers le même temps, T. Dean fait rapport de l'influence du fluor dans l'eau de consommation sur la réduction d'incidence de la carie dentaire. Comme vous savez ce qui en est résulté, je n'insisterai pas davantage. Plus directement rattaché à la pratique quotidienne, des progrès techniques s'enregistrent, qui nous permettent de nouveaux raffinements dans l'exercice de nos fonctions. Mentionnons l'emploi des plastiques, des alliages de chrome, des colloïdes à impression. Des tentatives pas toujours heureuses comme l'usage des abrasifs sous pression ou des ultrasons laissent entrevoir cependant qu'on trouvera des remplaçants à la "drille" de popularité douteuse. Je ne parlerai pas des progrès en orthodontie en chirurgie ou en endodontie. Ces disciplines ont toutes profité de l'application de nouvelles méthodes qui les rendent de plus en plus efficaces.

Voyons maintenant ce qui est à l'avant-garde de nos connaissances actuelles et ce qui fait l'objet principal des recherches en cours.

Le perfectionnement des techniques opératoires et des médications pré et post-opératoires ont permis à la chirurgie buccale de devenir un champ d'activité de plus en plus autonome. Son développement va maintenant de pair avec celui de la grande chirurgie, de la chirurgie plas-

tique et de la chirurgie orthopédique. Il existe maintenant la même différence entre le dentiste et le chirurgien buccal qu'entre le médecin chirurgien et le chirurgien tout court. Abstraction faite de tous les désavantages qui incombent à toute spécialisation, il n'en demeure pas moins qu'elle témoigne d'un développement très avancé, même d'une maturité pleinement atteinte. C'est le cas d'une cellule-mère qui se divise en deux cellules filles. L'orthodontie nous avait donné le même spectacle depuis longtemps; le futur nous fera assister au détachement de la prothèse, du bridgework et d'autres aspects de la pratique qui sont aujourd'hui du ressort de chacun de nous. Le champ d'action qui restera au praticien général relèvera dorénavant autant, sinon plus, de la prévention que de la thérapeutique. Cette orientation doit être synchronisée avec l'éducation du public. Il adviendra que la proportion des gens qui comprendront que la bouche est tout aussi importante que le reste de leur anatomie, désormais assez grande et assez influente pour donner le ton à toute la population exigera du praticien général de conserver ou d'améliorer leur denture naturelle. L'accent étant alors sur la conservation par des moyens biologiques plus que par la restauration par des moyens mécaniques, l'activité professionnelle s'exercera dans les domaines de la périodontie, de la pédocodontie et de l'hygiène appliquée plus que dans les domaines où nous excellons aujourd'hui.

L'imagination d'un tel panorama prend son origine de l'étude des sujets de recherches qui préoccupent nos hommes de science.

Dans le domaine de la prévention de la carie, on sait que le fluor qui parvient à la dent au moment de sa formation augmente sa résistance aux acides. Il reste à connaître la participation de la flore buccale dans l'immunité ou la susceptibilité à la carie. L'apport joué par l'hérédité n'est pas non plus négligeable. Certains microorganismes existent chez des souches de rats résistants à la carie et ne se retrouvent pas chez les souches

susceptibles. S'il fallait que l'immunité à la carie dépende surtout d'une symbiose particulière et que cette symbiose pourrait s'entretenir artificiellement, vous voyez d'ici les bénéfices qu'on pourrait tirer d'une telle application.

On vient aussi de mettre en évidence chez l'animal l'influence de la thyroïde comme facteur synergique du fluor. La combinaison des deux facteurs augmente considérablement l'immunité à la carie. D'ailleurs, tout n'est pas dit des relations qui existent entre les endocrines et la carie. Les hormones sexuelles sont actuellement l'objet de sérieuses investigations dans cet ordre d'idées. Il est fort improbable que ces recherches resteront infructueuses. Je n'ai pas besoin d'insister sur les avantages que nous procurerait toute acquisition dans cette voie.

Dans le domaine de la périodontie, le réattachement épithélial est en train de devenir d'application courante; on étudie sérieusement les conditions qui rendent cette régénérescence possible. Entre autres avantages, ça nous a permis de découvrir que nous étions dans une ignorance totale de la physiologie du ciment et que ce tissu assez paradoxal est devenu un sujet de recherches très intéressant.

Il n'est pas prématuré de prévoir l'usage des greffes de ciment, comme les greffes d'os, dans la reconstitution du périodonte.

En parlant de greffes d'os, on pense nécessairement aux banques d'os. Nous ne devons pas être bien loin alors des banques de ciment, et peut-être aussi des banques de bourgeons dentaires qui résoudraient le problème de la transplantation dentaire, se rappelant que cette dernière a apporté plus de désillusions que de succès.

Tout aussi prometteuses se révèlent les applications de l'enzymologie. Vous connaissez déjà l'emploi de la trypsine et de l'hyaluronidase dans le débridement des abcès pulmonaires. Le nettoyage des culs-de-sacs ou de certaines variétés de kystes dentaires et l'ablation du tartre seront probablement facilités par des moyens plus efficaces et moins laborieux que les

moyens chirurgicaux, dont nous disposons.

Je me rends compte que j'ai en tort de citer des faits et des prévisions précises. On retournera tout ça contre moi pour me prouver que je suis faible d'imagination et dépourvu de sens critique et que tous ces beaux sujets de recherches n'aboutiront à rien. Peu importe, que je me sois trompé dans le choix de mes exemples, là où je suis sûr d'avoir raison, c'est que, d'une façon générale, dans vingt ans, la pratique de la chirurgie dentaire portera l'empreinte des découvertes actuelles et des investigations scientifiques en cours en ce moment. L'aspect mécanique cède de plus en plus à l'aspect biologique. On se plaint encore que la dentisterie pré-

ventive n'est pas une entité académique. Elle n'a pas besoin de l'être. Elle est une attitude que tout praticien affichera dans vingt ans et elle influencera chacun de ses actes professionnels. Ce sera le gain majeur de la génération à venir sur la nôtre. Il éclipsera toutes les acquisitions nouvelles auxquelles nous nous serons habitués en cours de route.

J'ai été fort impressionné par un de nos confrères de Los Angeles qui adressait une verte semonce à une jeune patiente à cause de l'état problématique de sa bouche. "A l'âge de 30 ans, disait-il, elle présentera un bien mauvais cas de paradentose." Le praticien dans vingt ans sera comme ce confrère: il pourra prévoir ce qui se produira dans la bouche de son patient dans vingt ans.

Si Courteline revenait!

Nous lisons dans un journal français qu'un patient a porté plainte pour coups et blessures volontaires, parce qu'une femme dentiste l'avait torturé. (Pauvre petit, sans défenses! Surtout en face d'une femme!)

Le patient s'était fait fixer des dents à pivot, pour lesquelles il jugea le montant des honoraires excessif. (Que diable, ne s'était-il renseigné avant?)

Au cours du rendez-vous suivant il fit part à la jeune femme (sic) de son mécontentement, ajoutant (il fallait s'y attendre) que le travail n'était pas sans reproches.

Celle-ci aurait appelé deux aides qui, après un bref conciliabule, auraient saisi le patient (voyez la scène), le maintenant solidement au fauteuil, pendant que la femme dentiste (oh, horreur!) avec une meule soigneusement aiguisée (sic) entreprenait de scier les dents nouvellement posées que le patient terrorisé estimait trop coûteuses. Meurtri et la bouche ensanglantée, le malheureux, après avoir fui ce lieu redoutable, alla conter sa cruelle mésaventure à son conseil, qui en informa les autorités judiciaires. (*Médecine et Hygiène*)

XXXmes JOURNÉES ODONTO-STOMATOLOGIQUES Bruxelles, 20 au 23 juillet 1956.

Les Journées Odonto-stomatologiques, organisées chaque année par l'Association Générale des Dentistes de Belgique dans le cadre des Journées Médicales de Bruxelles, auront lieu cette année du 20 au 23 juillet.

Les confrères qui désireraient présenter un travail, ou simplement participer aux J. O. S., peuvent s'adresser dès maintenant au Comité d'Organisation: Maison des Dentistes, 166, chaussée d'Etterbeek, à Bruxelles 4.

Nouvelles de l'Association

Le premier ministre de Terre-Neuve fait part de services de santé gratuits

Le 22 décembre, l'Honorable Smallwood a annoncé que son gouvernement se propose d'organiser un plan de traitements médicaux, dentaires et oculaires pour les enfants en-dessous de 16 ans. Il a déclaré que ce plan serait le plus complet des services sociaux de toute l'histoire canadienne et que la législation dans ce but serait inscrite à la prochaine session de la législature. Pour le réaliser, le premier ministre a déclaré qu'il faudrait faire venir des médecins, des dentistes et des garde-malades d'Angleterre, d'Ecosse et d'Europe. M. Smallwood a qualifié le traitement gratuit des dents de "troisième plus grand" avantage social qu'ait jamais obtenu Terre-Neuve. Il classe, en premier lieu, les allocations familiales et, en deuxième place, les pensions de vieillesse.

Le docteur H. B. Fleming devient membre du Bureau des Gouverneurs

A l'assemblée annuelle de la Société dentaire du Nouveau-Brunswick, tenue le 30 octobre dernier, le docteur H. B. Fleming, de Moncton, N.-B. a été élu représentant de cette province au Bureau des Gouverneurs de l'A.D.C. Il succède au docteur A. J. Coughlan, ancien président de l'Association, qui représentait sa province au Bureau depuis 1948. Le docteur Fleming est un diplômé de l'Université McGill et il a exercé à Moncton, depuis sa graduation, en 1949. Il est né et il a fréquenté les écoles primaires de Moncton.

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Journal

OF THE CANADIAN DENTAL ASSOCIATION

The medical and public health aspects of fluoridation of communal water supplies

by ELLIS D. SOX, M.D., C.P.H.*, San Francisco, California.

The following excellent address to the Annual Meeting of the Canadian Dental Association, held in June at Banff, Alberta, served a dual purpose. Not only was the paper of pertinent interest to the members of the Association, but a tape recording was made in order that portions of the talk could be made available for broadcast to the general public. This paper, therefore, was prepared with this latter purpose in view. Ed.

INTRODUCTION

If this luncheon were held in San Francisco, we would all be consuming fluoridated water containing fluoride ion up to the level of 0.95 parts per million (p.p.m.). The purpose of this paper is to discuss with you the history of the development of fluoridation in San Francisco with some reference to its present status, and to consider the reasons why public health officials and the medical and dental professions believe that fluoridation of water supplies is not only beneficial in the reduction of dental caries, but is also a safe procedure as far as the health of the general public is concerned.

*Director of Public Health, City and County of San Francisco.

HISTORY OF FLUORIDATION IN SAN FRANCISCO

Early in 1951, the San Francisco Dental Society submitted to the Board of Supervisors of the City and County of San Francisco a proposal that the water supply of San Francisco, which is provided by the San Francisco Water Department, be fluoridated. The normal fluoride level in the municipal water supply was .05 p.p.m. The Board of Supervisors held hearings and considered all of the medical and dental aspects, and voted 9 to 2 in favor of fluoridation. In these initial hearings there was no opposition to fluoridation, and the discussions and hearings revolved around the opinions of professional experts.

Shortly after taking this affirmative action, the Board of Supervisors was presented with material and information opposing fluoridation. This opposition was a combination of lay opinion initiated largely by Mrs. Golda Franzen of San Francisco, and the second major source of opposition was from the Christian Science Church. As a result of this opposition, the Board of Supervisors decided to submit the original proposal to a referendum by the people. They determined that in the election to be held in November, 1951, the voters would vote on what was called a "Declaration of Policy", which read as follows:

"Declaration of Policy—Shall the City and County of San Francisco add chemicals to prevent or arrest dental decay to the water furnished the people of San Francisco by the San Francisco Water Department?"

Following a particularly active campaign on both sides, the matter came to a vote, with the result that the "Yes" votes totaled 114,125 while the "No" votes totaled 88,377. Thus the measure carried and the declaration of policy was established.

During this period, I was not the Director of Public Health of San Francisco, as I assumed my present duties in February, 1952. However, I lived in San Francisco at this time and am familiar with the activities that proceeded between April, 1951 and the election in November, 1951. A Citizens' Committee for Fluoridation was formed, composed of outstanding people from business and civic organizations, labor groups, various cultural groups, educators, and members of the dental and medical professions and other scientific bodies. One of the lay members was elected chairman of this committee and a speakers' bureau was organized, on which members of the Dental Society and others served.

The opposing groups were banded together in three separate organizations; (1), the Churches of Christ, Scientist; (2) "The Citizens' Committee for the Protection of San Francisco's Good Water"

and (3) "The Citizens' Committee Against Fluoridation".

The campaign carried on by the group in favor of fluoridation was maintained on a scientific and practical plane, whereas the opposing forces brought in the same type of arguments that are forthcoming even in the present day. Just prior to the election, a complaint was served on the Board of Supervisors and others who were listed as in favor of this declaration of policy, and a suit was filed alleging \$500,000.00 damages based on the submission of "false, misleading, and fraudulent statements" by the proponents. The Superior Court terminated this suit on December 11, 1951, the Court declaring that "no legally recognized course of action is stated or can be stated".

Following the approval of policy by the people, the Board of Supervisors appropriated funds to the San Francisco Water Department for the initiation of fluoridation. The ordinance which had originally been adopted in 1951 specified that the purpose of this program was as follows: "As a measure in conservation of the health of the inhabitants of the City and County of San Francisco, the Board approved of the addition of fluoride to a portion of the water furnished to the customers of the San Francisco Water Department of the City and County of San Francisco in a ratio not to exceed one part of fluoride to one million parts of water". Meanwhile, the State Board of Public Health approved an amended permit to permit the Water Department to fluoridate the water not to exceed 1.5 p.p.m.

The Water Department purchased and installed the necessary equipment, and on August 25, 1952, I had the pleasure of pressing the button that initiated the fluoridation program providing fluoridated water to approximately two-thirds of the population of San Francisco. The initiation of the program was given adequate publicity with newspaper photographers present so that the charge of secrecy could not be made. There were only occasional complaints regarding the water re-

ceived by either the Department of Public Health or the Water Department, and many of these were made by those who were not in the area receiving fluoridated water. Furthermore, many of the complaints had reference to a change in the taste of the water, which does not occur.

EXPERIENCE WITH FLUORIDATION

During the six months between the time I became Director of Public Health and the initiation of fluoridation, there were many pieces of literature sent to me, and I had many conferences with people who were opposed to fluoridation. I had given the matter extremely thorough study, and in 1952, it was my firm belief on the basis of all the material I could secure both for and against fluoridation, that the fluoridation of water supply not to exceed 1 p.p.m. would not in any way endanger the lives of either the well or the sick people living in San Francisco, and that we could anticipate a reduction after some eight or ten years of fluoridation in the rate of dental caries by as much as 60%.

In the approximately four years that have intervened since we initiated fluoridation, I have had no reason to change my viewpoint, and the mass of evidence which has accumulated since then further supports my belief that this is a safe procedure and one that is desirable as a part of the preventive services available to the people of San Francisco.

THE FLUORIDE ION

Now, let us get one fact straight initially. We are considering only the introduction of the fluoride ion into the water supply. The opposition to fluoridation occasionally leans very heavily upon an alleged difference between the fluoride ion in inorganic compounds and the fluoride ion in organic compounds. They further place considerable emphasis upon the difference between "natural" fluorides and "artificial" fluorides.

The water of San Francisco normally contains fluoride ion at the level of 0.05 p.p.m. If I were to feel that the presence

of fluoride ion in the public water supply was dangerous to the public health in any concentration, I would have had only one course of action to take; that would have been to have recommended against the increasing of the fluoride ion content of the water to 1 p.p.m., and I would further have been forced to order our water defluoridated so that there would be not one single little ion or atom of fluoride in our drinking water. However, the evidence was overwhelming in favor of the fact that there was nothing dangerous in the consumption of water containing 1 p.p.m. for the people of San Francisco. I therefore had no hesitancy in approving the initiation of the process.

PRECAUTIONS

I was informed by the City Attorney that if I felt that this procedure was dangerous to public health, the Board of Supervisors would order the Water Department not to put it in upon my request. I was further informed if at any time after fluoridation was initiated, I felt it was dangerous, the Water Department would immediately cease fluoridation upon my request.

OPPOSITION

Now, during the period from August, 1952 until July, 1955, only two-thirds of the water supply was fluoridated. The Department was flooded with information from all over the country in opposition to the continuation of fluoridation, and protesting any consideration of the extension of fluoridation to the balance of the water supply. It is interesting to note that some of these publications also quote arguments against vaccination and against pasteurization of milk. This, to some extent, points up the fact that the type of opposition to fluoridation is similar to that which vaccination, pasteurization, and chlorination has had in the past.

In December of 1953, I testified before a committee of the State Legislature still favoring fluoridation.

In the spring of 1954, and for the following year, the Board of Supervisors

and other city officials were flooded with protests. Early in 1954, the Board of Supervisors in San Francisco held hearings relative to extension of fluoridation. These hearings were held before the Public Utilities Committee of the Board of Supervisors, which had under its consideration a determination of policy for extension of fluoridation by the Water Department, which is administered by the Public Utilities Commission of San Francisco.

Supervisor Francis McCarty was Chairman of this committee, and held many prolonged hearings, but required each person testifying to qualify himself or herself as an expert in the field in which he wished to speak. Therefore, when housewives or nurses or operators of health food stores or business people wished to testify upon the toxicological effects of fluoridation, their testimony was ruled out unless they could qualify themselves as chemists, biochemists, toxicologists, pathologists, clinicians in medical or dental practice, or engineers. As Supervisor McCarty pointed out, "When we wish to secure the necessary information with reference to planning streets or bridges or traffic systems, we go to the best engineering people we can find. When we wish to legislate pertaining to the health of the people of San Francisco, we go to the medical and dental professions".

He pointed out that the testimony heard by this committee as far as qualifications of the persons testifying did not reveal that any professional group or any qualified professional persons had testified that fluoridation was harmful. Accordingly, this committee of the Board recommended to the Board of Supervisors that the funds be appropriated to the Water Department and that the Water Department be ordered to complete the fluoridation program.

TOTAL FLUORIDATION

In July, 1955, the total water supply of San Francisco was fluoridated, and in addition, those cities lying to the south

of San Francisco in San Mateo County which purchase water from the San Francisco Water Department also began to receive fluoridated water. Therefore, after July 1, 1955, not only the 800,000 people in San Francisco have been consuming fluoridated water, but between 150,000 and 200,000 people outside San Francisco are also consuming it.

The Health Department of San Mateo County has observed no untoward effects, and as yet very few complaints about the water have been received. It is interesting to note that these cities and a private water company which are purchasing water from San Francisco are furnishing fluoridated water to people with no legal action being taken by any governing body.

WHOLESOMENESS

The laws of the State of California provide that "It is unlawful for any person to furnish or supply to a user water used or intended to be used for human consumption or for domestic purposes which is impure, unwholesome, unpotable, polluted, or dangerous to health". The State Board of Public Health, the Attorney-General's office, and the courts of California have held that such fluoridated water is wholesome, pure, and potable, and that it is not dangerous to health. As a matter of fact, it is my contention that water containing 1 p.p.m. of fluoride is more wholesome than water which contains less than that amount and is more wholesome than water which contains beyond 1.5 p.p.m. of fluoride.

RESPONSIBILITY OF HEALTH OFFICER

Now, let's look at the medical and public health aspects of fluoridation. Public Health has been defined as "the art and science of preventing disease, prolonging life, and promoting physical health and efficiency through organized community efforts . . ." ⁽¹⁾ The health officer of a city, a county, or a state or province has as his patient not any one individual but all of the people in the political subdivision which he serves. His patient, in other

words, is the whole population for which he is essentially the family physician. It is his responsibility to review his death records and his morbidity records to determine what particular problem or illnesses are affecting his patient. He finds, of course, that communicable diseases are no longer a major public health problem, but he still must focus his attention on these diseases in order to keep the present rate as low as possible and in order to reduce them further, if possible. However, many non-communicable diseases constitute public health problems, merely because they affect a considerable portion of his patients. Therefore, public health programs have been developed to reduce the incidence, disability, and deaths resulting from heart disease, cancer, accidents, chronic alcoholism, poor mental health, and dental caries.

The Health Officer has to deal with the pathology of his patient by treating the problem through organized use of community facilities, and he must of course institute preventive measures to reduce the spread of communicable diseases or the further extension of non-communicable diseases affecting his patient. You are aware of the measures taken to reduce diphtheria and other communicable diseases. Diagnosis of the disease comes first. The breaking of the chain of transmission through isolation and quarantine comes next. Then comes the treatment of the individual patient to reduce mortality and to reduce complications and sequellae which may result in chronic or permanent disability, and finally or concurrently comes the initiation of preventive measures to decrease the susceptibility of the rest of his patient, the presently unaffected population, from the extension of this disease.

Any community which has a high incidence of disease or any other abnormality which shortens life or which results in a reduction of mental or physical efficiency is a sick community, and the family doctor of that community, the Health Officer, must seek out ways to prevent disease, prolong life, and promote

physical and mental efficiency, or he is not meeting his obligations to the people he serves. He is guilty of community health malpractice unless he utilizes all possible resources to diagnose and treat the ailments of his patient, the community, or the state or province which he serves. This responsibility exists whether or not the process affecting the community's health is communicable or non-communicable. He must utilize all of his professional resources, whether they are available to him within his own department or whether they are the community resources found among those in the private practice of the healing arts. As a physician, he is hardly capable of diagnosis or treating the oral health of his people, so he must depend upon the dental profession and upon other resources to reduce the incidence of dental and oral disease.

A look at practically any community reveals that dental caries is a universal disease of almost any age group and practically any person except the edentulous. However, even this latter group is probably edentulous because of prior dental caries, gingivitis, and other oral or dental disease, except, of course, infants.

As health officer, your community family doctor must determine who are affected, what predispositions exist, and what elements of personal and environmental hygiene may affect the rate of this disease. He must further determine what factors can be changed so that the rate can be reduced. Even if there were available adequate dental services and it was financially feasible to fill every cavity, unless he promotes measures to reduce the future occurrence of dental caries, he is falling short of fulfilling his responsibilities.

Here we have a general outline of how dental caries, although not communicable, has become recognized as a public health problem, because it affects such a large proportion of the population. In fluoridation we have the method of choice in reducing dental caries as a health problem because it is most feasible, the least ex-

pensive, and the most logical of all the methods proposed.

Cost

The cost of fluoridating San Francisco's water supply is \$1.66 per million gallons of water. This includes the amortization of the cost of equipment. This averages out to be equivalent to six cents per capita per year for the prevention of approximately two-thirds of dental decay.

Associated with this will be a reduction in periodontal disease, malocclusion, deformities of the mouth, and the general emotional and mental aspects of oral deformity.

MEDICAL AND PUBLIC HEALTH ASPECTS

However, before the institution of any procedure which will reduce disease, it is necessary to study that procedure to be assured that it will accomplish what is anticipated, and in accomplishing the desired result, there will be no associated side actions or complications which would produce other processes likely to affect the patient's, that is the community's health, adversely. In other words, even if we accept in principle that those consuming water containing approximately 1 p.p.m. of fluoride during the first ten or fifteen years of their lives will have about 60% less dental caries, can we be sure that there will not be deleterious effects affecting not only with these children but other components of the community?

During the last fifty years, the literature of dentistry, medicine, public health, and the basic sciences has been full of studies of the fluoride-dental caries relationship, mottled enamel or epidemic dental fluorosis and the toxicology of fluorides, both water-borne and industrial in origin. During the last fifteen years, a series of epidemiologic studies and more specific toxicologic and clinical studies have been carried on which have substantiated both the efficacy and the safety of fluoridation of communal water supplies. The natural laboratory in which these epidemiologic studies has been con-

ducted was found in communities in the United States which can be divided into three basic groups:

1. Those with water supplies deficient in fluorides; in many cases having none or only a trace.
2. Those whose water supplies had excessive amounts of fluoride.
3. Those whose water supplies have what many workers have referred to as "optimum supplies of fluorides"; that is, between 0.8 and 1.2 p.p.m.

These communities were located in many different geographic and climatic areas, and provided information concerning different environmental situations and cultural and ethnic groups. The studies of F. S. McKay and G. V. Black² first established the epidemiologic approach to the relationship of mottled enamel with an unknown etiologic agent present in domestic water supplies consumed during the period of tooth calcification. These studies covered a period of eight years ending in 1916, and involved people in Colorado and Arizona. The conclusion, however, only related mottled enamel to a substance in the water supply.

In 1931, M. C. Smith, E. M. Lantz, and H. D. Smith³ of the University of Arizona established the relationship of mottled enamel to the presence of fluoride in domestic water. In 1932, the two Smiths⁴ correlated dental fluorosis to the concentration of fluorides in domestic water.

In the following ten years, quantitative epidemiologic studies were carried on by Dean⁵ and others, which established a variation of endemic dental fluorosis with the fluoride concentration of communal water supplies, and further gave specific support to the observation made by many that there was some inverse relationship between dental caries and endemic dental fluorosis. These and many other studies showed that the optimum effective fluoride level of domestic water which would reduce dental caries without producing cosmetic effect upon the enamel was about 1 p.p.m. of fluoride ion.

The next logical step was to verify

these findings which existed in areas where there was naturally this optimum level of fluoride by adjusting the fluoride level of water low in fluoride to 1 p.p.m. by the addition of fluoride to the domestic water supply. Three major independent studies were initiated to secure information in this regard, and to also observe what side effects such fluoridation might have upon the general health of the consuming public. These three studies were begun in 1944 and 1945, and were completed only during the last year or two. One of these studies was here in Canada, involving Brantford, Stratford, and Sarnia in the province of Ontario. The other two were in the United States.

One involved the cities of Grand Rapids and Muskegon, Michigan, and Aurora, Illinois. This last city had a natural level of fluoride of 1.2 p.p.m. The water of Grand Rapids was fluoridated to a level of approximately 1 p.p.m.

The same approach was made in the State of New York with the cities of Kingston and Newburgh being selected. The city of Newburgh's water was artificially fluoridated to between 1.0 and 1.2 p.p.m. The city of Kingston had a natural level of 0.12. The results of these studies were comparable as far as the reduction of dental caries was concerned. In the cities in which the level of fluoride was brought up to 1 p.p.m. and in the city of Aurora, Illinois where the normal content was 1.2 p.p.m., the incidence of dental caries was reduced by approximately 60% as compared with the incidence in the control cities in which the fluoride level was practically zero.

The Newburgh and Kingston fluoride study offered its final report in December, 1955, ten years after the inception of the study. The report was divided into four sections, the first of which reviewed the history of the project. This paper was presented by Herman E. Hilleboe, M.D., Commissioner of the State Department of Public Health of New York. Edward R. Schlesinger, M.D., Associate Director, Division of Medical Services, of the New York State Health Department, and As-

sistant Clinical Professor of Paediatrics, discussed the paediatric findings after ten years. Harold C. Hodges, Ph.D., Professor of Pharmacology at the University of Rochester, discussed the metabolism of fluorine. David B. Ast, D.D.S., Director of the Bureau of Dental Health, presented combined clinical x-ray and dental findings. This report was published in the *Journal of the American Dental Association* of March, 1956^o.

A base line medical and dental survey was carried on in 1944 to determine the general and dental health status of children in both Kingston and Newburgh. The D.M.F. rate of the children in the 6-12 year age group was 20.2 per hundred permanent teeth in Kingston and 20.6 in Newburgh. Ten years later in the 6-9 year olds in Newburgh who had consumed fluoridated water, the D.M.F. rate per hundred permanent teeth was 56.7% lower than their counterparts in Kingston. Among the 10-12 year olds, the difference was 52.2%. It was 47.7% less in the 13-14 year old age group and 41% lower in the 16 year old group. The D.M.F. rate for first permanent molars was considerably lower in each of the specific age groups in Newburgh as compared with Kingston. This is important, as you well know, because of the significance this tooth has in the future development of the dental arch.

Furthermore, there were no cases of mottled or severe mottling in the Newburgh group, although about 10% of those examined had questionable dental fluorosis, about 5% had very mild and cosmetically insignificant mottling, and 1% mild fluorosis. It is interesting to note, however, that there were fewer non-fluoride enamel opacities and slightly smaller incidence of gingivitis among those consuming fluoridated water in Newburgh.

This study also included detailed paediatric investigations to determine what, if any, were the general health effects. Careful clinical studies involving 500 children in Newburgh and 405 in Kingston revealed no significant differences with re-

spect to skeletal growth and development, blood findings, urinary findings, hearing, vision, menstruation, and others. A special study of possible renal effects was carried on by Schlesinger, Overton, and Chase⁷. The differences seemed to favor those in Newburgh, but there was no medical significance in the incidence of abnormal urinary findings. A review of the death rates from cardiovascular-renal diseases in all age groups for the thirteen year period from 1942 to 1954 revealed no significant differences in the two cities.

This lack of any evidence of differences between death rates for specific diseases was reported in 1954 by Hagen et al⁸ in which they compared death rates from certain diseases in 32 pairs of cities, in 16 states, half of which had fluoride levels as high as 4 p.p.m. and half of which had none or practically none. The diseases studied were cardiovascular diseases, cancer, intracranial lesions, nephritis, and cirrhosis of the liver. No significant differences could be determined in this study.

Leone and his associates⁹ completed a ten-year study in 1953 involving a group of persons living in Bartlett, Texas, where the domestic water supply contained 8 p.p.m., and a group from Cameron, Texas, where the fluoride content of the water was 0.4 p.p.m. This study revealed that excessive amounts of fluoride did not produce gross physical defects other than endemic fluorosis. There was some x-ray evidence of increased osteosclerosis in some Bartlett residents, but there were no loss of function or other ill effects.

To review with you all of the medical data which supports the contention that the consumption of water containing 1 p.p.m. is safe to the consuming public would be a long drawn-out procedure. It should be mentioned at this point, however, that there is some evidence that 1 p.p.m. cannot be accepted as an optimum and safe level without some qualification. An individual consuming a litre of water each day containing 1 p.p.m. would be ingesting through that water 1 milligram

of fluoride per day. If, because of climatic conditions, his water consumption would be markedly increased, say to three or four litres a day, his daily consumption would therefore be three to four milligrams per day.

FLUORIDATION AND THE MEAN AVERAGE TEMPERATURE

Galagan and Lamson¹⁰ compared the level of dental fluorosis of residents of Arizona with residents of western states consuming water having approximately the same fluoride level. It was their conclusion that where the average mean annual temperature approximates 70° F, some downward adjustment in the fluoride content may be indicated. In Canada, where the average mean temperatures are between 30° and 50° F, it would appear that 1 p.p.m. is a safe level. The California State Department of Public Health recommends a fluoride level closer to 0.8 p.p.m. for some of the cities in the desert areas of the State.

Although there have been reported cases of illness allegedly due to the ingestion and inhalation of fluoride, the majority of cases reported involved the ingestion of more than 8 p.p.m. for long periods of time, or are related to industrial situations in which the dosage is difficult to determine.

REPORTED "ILL EFFECTS"

Waldbott¹¹ of Detroit reported in 1955 that he had "investigated a series of cases of fluorine poisoning from drinking water at the so-called 'safe' concentration of 1 p.p.m." Dr. Waldbott is reported¹² in one of the anti-fluoridation publications as being editor of the "National Fluoridation News". Actually, it is his wife, Dr. Waldbott reports publication of a report of only one case, but points out that it typifies the many that he has seen. His patient was a 35 year old woman who had spent the first five years of her life in China and had lived in different cities in the United States, having moved to Highland Park, Michigan, in 1944, where the water was not fluoridated until 1952. The

patient showed evidences of dental fluorosis which indicated that she had lived in an area high in fluoride at the time when her teeth were forming. She presented a complicated syndrome of stiffness and severe pain in the spine, gastric disturbances, stomatitis, numbness in legs and arms, loss of mental acuity, visual disturbances, and general malaise. These symptoms were of several months' duration prior to September 8, 1954. Consultants could find no pathologic explanation for her symptoms, and no diagnoses were made. Waldbott, however, states that her symptoms disappeared when she was taken off the fluoridated water of Highland Park and recurred when she began consuming this water again. He does not state whether the non-fluoridated water she consumed had all of the chemical constituents of the Highland Park water, and whether or not she was aware of which type of water she was drinking.

The fact that four to six weeks after she was taken off the fluoridated water she was still excreting in her urine 1.37 to 1.38 mg. of fluoride each day suggests that she was mobilizing fluoride from her bones and excreting it, or that she was consuming fluorides from some source other than from the water. It is difficult for me to agree with Waldbott that the symptoms and the pathology of this case can be attributed to the consumption of water containing 1 p.p.m. from September, 1952 until September, 1954, when she presented herself to him.

Hodges⁶ reports in Rochester, New York, prior to fluoridation, daily urinary excretions of fluoride ranged from 0.5 mg. to 1.5 mg., and he regards these as normal. Hodge further points out that "crippling fluorosis", a syndrome characterized by restricted movement of the lower vertebrae, can occur when men ingest from 20 to 80 mg. of fluoride daily for from ten to twenty years.

A case involving rigidity of the spine with paraplegia was reported by Rao in the *Journal of the Indian Medical Profession* in September, 1955. This paper was abstracted in the form letters section of

the *Journal of the American Medical Association* of December 10, 1955, Page 1475. This patient, however, consumed water containing 7.2 p.p.m. of fluoride. Presumably in that climate, daily water consumption might have brought his daily fluoride intake within the 20 mg. range indicated by Hodge. Here again, this case cannot be related to the ingestion of water containing 1 p.p.m. of fluoride.

The opponents of fluoridation in many instances have referred to two cases reported in San Francisco. They have published a purported photostat of a letter from a San Francisco physician addressed to the Health Department and the Water Department, reporting one of these cases. The second case, incidentally, was reported by the same physician. I use the term "purported" in referring to this letter, because the publication did not include the postscript which this physician added.

This physician reported that in January, 1953, a female patient came to him with a "dermatitis of the whole body, badly cracked and swollen tongue, painfully inflamed inner cheeks, and deep cracks at either corner of the mouth". He could not determine the etiology nor did he make a specific diagnosis, but stated that the symptoms disappeared when she ceased drinking our fluoridated water and washing her clothes in the same water. One paragraph of his letter read as follows: "You can imagine the plight of this woman as she is deprived entirely of the use of city water, and small wonder that she objects to drinking of the poison that she finds in insects and rat poisons". This physician further went on to state that he had a dermatitis of both of his hands as a result of washing them in the fluoridated water of San Francisco. He stated that he was in his office only two days a week, and that he spent the rest of his time in a city forty miles south of San Francisco not receiving fluoridated water.

At this time, only a portion of San Francisco's water supply was fluoridated. This patient did live in an area receiving fluoridated water, but the doctor's office

was located in an area not receiving fluoridated water. When I informed him of this, he was nonplussed, and his only comment had reference to the "communist plot" of putting rat poison into the public water supply. He reported a second case who moved out of San Francisco and informed him that her condition was improved. The only two cases of untoward reaction attributed to our water supply came from this physician.

San Francisco has more than 2,400 licensed physicians. There are two medical schools and two dental schools. The Department of Health operates an Emergency Hospital Service treating 90,000 patients a year. In private hospital clinics, visits exceed that number. The Department further operates hospital facilities totaling 3,400 beds with approximately 25,000 admissions a year. It further provides school health services to 108,000 school children, and sees thousands of people in its Child Health Conferences, Chest Clinic, and communicable disease clinics each year. No other cases have been reported from all of these sources, even though I have requested that any suspicion of incrimination of our fluoridated water in any type of illness be reported to me. If such a case is ever reported, it will receive a thorough investigation involving the combined efforts of appropriate specialists from the two medical schools and from the Department of Public Health. This to me indicates the safety of fluoridation of the water supply.

The death rates of San Francisco have not reflected any changes that can be related to the additional fluoride in our water supply. The Coroner of San Francisco has informed me he has seen no indication that consuming fluoridated water has produced death or has been a complicating factor in any death that he has investigated, and he investigates more than one-fifth of all deaths occurring in San Francisco.

CIRRHOSIS

It is interesting, however, to note that the opposition to fluoridation will pick up an idea and publicize it, even though it is ridiculous. For example, in one publication, fluoridated water is claimed to be the cause of cirrhosis of the liver. It was pointed out that the reason San Francisco has such a high rate of deaths due to cirrhosis of the liver is because of the fluoridated water supply. In San Francisco, cirrhosis of the liver is the fifth cause of death, and it has held that place since before we fluoridated. Cirrhosis of the liver is the eleventh cause of death nationally. If there were any relation between cirrhosis of the liver and fluoridation, our records would lead us to the conclusion that cirrhosis of the liver is prevented by fluoridated water, because the rate has dropped since we started fluoridation.

The facts are these. We started fluoridation in August, 1952. In April, 1951, we started an outpatient clinic for chronic alcoholics. The reason: cirrhosis of the liver was a major cause of death, and the per capita consumption of alcohol in San Francisco was $3\frac{1}{2}$ times the national average.

MENTAL HEALTH

In another publication, a quotation from a newspaper stated that in Grand Rapids, mental health was a major public health problem. The conclusion in this newspaper was that mental health was a public health problem because Grand Rapids was fluoridating its water supply. Mental Health has been a major public health problem in the United States for years. Approximately half of our hospital beds are occupied by the mentally ill. One has to reach out rather far to relate poor mental health to the consumption of fluoridated water.

FURTHER STUDIES

If I had any doubt about the efficiency and safety of fluoridation of public water supply to the level of 1 p.p.m., in 1952

and again in 1955, the subsequent studies would relieve these doubts. In the May, 1956, issue of *Public Health Reports*, Leone, Geever, and Moran ⁽¹³⁾ report on studies of acute and subacute toxicology of sodium fluoride in animals. These studies involved primarily the intravenous infusion of sodium fluoride into dogs. The conclusions suggest that lethal doses are even higher than the 5-10 grams in man normally considered to be lethal, which further widens the safeguards between any danger from overdosage.

ENGINEERING ASPECTS

From an engineering standpoint, the fluoridation of water is accomplished in very much the same way that chlorination is accomplished. The fluoridation unit is an automatic device which cannot overfluoridate. It operates in such a way that if it gets out of order, it will fluoridate less than it should, and if it is sufficiently out of order, it cuts off fluoridation automatically.

As far as civil defense, sabotage, and accidental over-fluoridation are concerned, it is a practical impossibility. The amount of fluoride required to produce toxic doses is so great that normal procedure would preclude having that amount of fluoride available at any one time.

STATEMENTS OF FLUORIDATION

The report of the Committee of the Portland, Oregon, City Club ⁽¹⁴⁾ on the fluoridation of the public water supply, which was published in March, 1955, states:

"1. The fluoridation of public water supplies as a public health measure has been probably as thoroughly investigated as any public health measure ever proposed.

"2. The overwhelming weight of dental, medical, and other scientific opinions in the United States and Great Britain confirms fluoridation of the public water supply as a safe and economic way of cutting the incidence of dental caries by at least half.

"3. The Committee has found no competent evidence in conflict with the overwhelming weight of scientific opinion."

The Report of the St. Louis Medical Society ⁽¹⁵⁾ reveals approximately these same conclusions.

The Report to the Mayor on Fluoridation of New York City ⁽¹⁶⁾ submitted by the Board of Health of the City of New York in October, 1955, includes the following conclusions:

"1. Dental decay is prevalent among all but a small per cent of New York City's population. Its extent, widespread neglect, cost of correction, and impact on general health make it a true public health problem demanding a preventive approach.

"2. Water fluoridation at the level of 1 p.p.m. has been well established as a procedure which offers approximately a 60% reduction in new dental decay, not only among children, but among adults who consume such water throughout life.

"3. A substantial body of scientific information attests to the achievement of these substantial dental benefits without systemic harm to the body. There is no known health measure, the safety of which has been subjected to as rigorous an investigation prior to adoption as has water fluoridation.

"4. The evaluation of all known techniques for prevention of tooth decay leads to the conclusion that water fluoridation combines maximum benefit and practicality."

The Board went on to urge "that appropriate action be taken to improve the health of the citizens of New York by providing for the fluoridation of our municipal water supply".

CONCLUSION

When we consider these more recent statements of policy and combine them with the knowledge gained from recent studies, and then further add to these arguments in favor of fluoridation the recommendations of such organizations as the American Medical Association, the American Dental Association, the American Public Health Association, the medical and dental associations of practically every State and Province, the Canadian Dental Association, the Canadian Medical

Association, the Commission on Chronic Illness, which is an independent national agency founded jointly by the American Hospital Association, the American Medical Association, the American Public Health Association, and the American Public Welfare Association, and when we further add all of the information that is continually forthcoming from qualified clinical researchers and those engaged in the basic sciences, there can be no conclusion but that fluoridation of public water supplies is an appropriate public health measure; safe, effective, and practical.

The reaction against fluoridation resembles so much the attitudes of people in the past toward pasteurization, chlorination, and vaccination, that one is reminded of a statement by Edmund Burke⁽¹⁷⁾ the famous British statesman, who in the eighteenth century said: "Those who carry on great public schemes must be proof against the most fatiguing delays, the most mortifying disappointments, the most shocking insults, and, what is worst of all, the presumptuous judgment of the ignorant".

However, in dealing with this problem, we have to remember what Julius Caesar⁽¹⁸⁾ said two thousand years ago in his commentaries on the Gallic Wars: "*Fere libenter homines id quod volunt credunt*". ("Men willingly believe what they wish").

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The next step in our development is to advance our knowledge to a point where dental disease joins the other so-called preventable diseases. This step is as certain as the fact that children grow up to be adults, for disease, like man, goes through certain ages. In the beginning, when we know little of cause, we can treat only empirically. As research adds to our knowledge of cause, we can control; and when the cause of a disease is fully known, we can prevent.

Willard C. Fleming, Dean, University of California,
Journal of the American College of Dentists, March 1956.

The importance of the deciduous dentition in relation to the permanent dentition

by MELVYN SCHWARTZBEN, D.D.S.*

FIRST PRIZE ESSAY
War Memorial Award Competition

INTRODUCTION

The emphasis in dentistry today is on prevention which combines early recognition and prompt arresting of conditions and hence their subsequent results.

Programs of prevention are now being directed towards both caries and periodontal disease. The neglect of a malocclusion condition will contribute to both these conditions. The conscientious practice of dentistry requires that the dentist accept responsibility for recognizing and advising the patient in all aspects of the field.

Towards the end of the last century, orthodontists became interested in the problem of occlusion as related to malposition of the teeth. At first, they were primarily concerned with the teeth as units to be moved into position by appliances; later, the emphasis shifted to a study of growth and development of the jaws. At the beginning of the present century, periodontists (Stillman, McCall, Box, Schuyler, etc.) emphasized the effects of faulty occlusion on the supporting structures of the teeth. They stressed the importance of a balanced occlusion on the preservation of the teeth. Recently, Thompson, Granger, Lindblom, Beyron, etc., have presented a more complete picture of the functions of the masticating organ.

In their survey in 1951, Massler and Frankel ⁽¹⁾, found that 80% of the examined children had malocclusions. In 1953, Nord ⁽²⁾ stated that following a review of surveys all over the world, 50%

of all children were found to have malocclusions, of which 50% required definite treatment.

To meet this challenge, prevention must be kept uppermost in the mind of the dentist. A good occlusion aids the prevention of caries and periodontal disease. Prevention in youth results in more efficient service in the adult dentition. This prevention is the dentist's to bestow.

NORMAL OCCLUSION

The establishment of the occlusion of the teeth begins at about the sixth month of life and ends with the eruption of the third molars. In order to describe the phenomenon of normal occlusion of the teeth, it is necessary to describe it at some stage or period in the individual's life. From this there has unfortunately, arisen a tendency to consider occlusion as a static entity which is not subject to change and as an isolated entity which is not influenced by the rest of the organism.

The concept of occlusion has changed radically in the last few decades. For a long time, the term occlusion applied only to the static relationship which exists when the jaws are closed. Essentially this postulated an ideal arrangement of the teeth which is based on their shape and on their correct proximal and occlusal relationship. This was the hypothetical standard of occlusion first stressed by Angle, and so thoroughly described in most orthodontic texts.

A more dynamic concept gradually replaced the above mentioned idea of occlusion, and the following definition suggested by Hemley ⁽³⁾ evolved;

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... occlusion refers to the manner in which the maxillary and mandibular teeth meet during functional excursions of the mandible.

Finally, the scope of occlusion was enlarged to comprise all the integral parts and functions of the dynamic masticating organ ⁽⁴⁾. This includes the teeth and their supporting tissues, the mandible and maxilla, the two temporomandibular joints and the nervous, vascular and muscular systems. This combination of structures has been referred to as the "stomatognathic organ," by Thompson ⁽⁵⁾. Thus, we see that occlusion now implies, "physiologic, harmonious relations in the functioning of the stomatognathic system without regard to theoretically correct anatomic relations".

The development of occlusion in the individual is a long and constantly changing process which begins with conception, extends throughout life and ends with death. The inherent growth pattern which predetermines the pattern of the occlusion of the teeth is subject to modifications brought about by postnatal development and growth as modified by functional adaption and by environmental forces including those of general constitutional and of local dentofacial origin.

FORCES OF OCCLUSION

Various forces influence the growth and development of the dental arches, the arrangement of the teeth, assist in the maintenance of the dentofacial structures, and determine the extent to which the inherent growth pattern will manifest itself in the adult dentition. These forces of occlusion are in turn influenced by the inherent growth pattern, functional, constitutional and environmental factors.

From our studies of normal occlusion, we know that each tooth has a definite relation to its neighbouring tooth and to its opposing teeth. The relationship is so exact that it can be described in detail

to the extent of the relationship of each cusp to an opposing inclined plane.

According to Angle⁽⁶⁾, the "forces of occlusion," are

... those factors which cause teeth to assume and maintain their proper position in the line of occlusion.

The "line of occlusion," is

... that line with which in form and position, according to type, the teeth must be in harmony if in normal occlusion.⁽⁷⁾

As each tooth erupts through the mucosa it is guided to a certain position in the dental arch. If all the forces of occlusion are acting normally the tooth will take its proper position in the arch. If the same forces of occlusion are acting normally throughout the period of eruption of the entire dentition all the teeth will be in their proper positions. However, if any one of the forces of occlusion becomes abnormal during this process, then malocclusion will result. Now, if one tooth is in malposition, it has an affect on some other tooth or teeth and hence, the malocclusion is not localized to the original tooth. Also, once the teeth have erupted in the line of occlusion and the occlusion is normal, the forces of occlusion must continue to function normally for the occlusion to remain normal. ⁽⁸⁾

To understand the various stages in the development of normal occlusion it is necessary to know how these forces operate. The "forces of occlusion" were originally tabulated by Angle and may be briefly described as follows:

NORMAL CELL METABOLISM for dentofacial development and growth. By the above is meant the normal functioning of the cells which form the teeth, of the cells which are associated with the eruption of the teeth and the surrounding areas. These cells are in turn dependent for their normal function on the normal metabolism, development, and function

of the whole body. Thus cell metabolism is the first force to affect the tooth in assuming a normal position.

NORMAL MUSCULAR PRESSURE of the facial and masticatory muscles. By this is meant the normal function of the muscles directly related to the teeth and jaws. These are the muscles of the tongue, cheeks and lips. i.e., the buccinator, orbicularis oris, caninus, triangularis, quadratus labii superioris, zygomaticus, risorius, quadratus labii inferioris and mentalis.

When a tooth starts on its eruption, its path is not necessarily such as to bring it into normal position. Normal muscular pressure comes into play and assists in directing the tooth into its proper place buccolingually in the line of occlusion. Thus the muscles of the lips, cheeks and tongue act as a framework containing the dental arch.

NORMAL FORCE OF THE INCLINED PLANE in mastication and occlusion. Hardly ever do we find the teeth in their proper position as we know normal occlusion when they erupt. But as the maxillary and mandibular teeth approach each other during eruption and contact is established, the inclined planes of the occlusal surfaces start acting as a wedge. They force the teeth into such a position that the lingual cusps of the maxillary teeth will fall into the fossae of the mandibular teeth and the buccal cusps of the mandibular teeth will fall into the fossae of the maxillary teeth. The same principle holds true in the action of the inclined planes of the cusps in a mesio-distal direction. As the function of mastication proceeds, the wedging process continues and we finally achieve that exact interdigitation that we find in normal occlusion. Once normal occlusion has been established, the force of the inclined planes exerts a powerful influence in maintaining the normal occlusion.

NORMAL APPROXIMAL CONTACT of the teeth in the same arch. The force of the approximal contact is the force which the proximal surfaces of the teeth of one arch exert on the approximating teeth in the same arch. It differs from the force of the inclined plane in that it acts only on approximating teeth and in the fact that it is a passive force rather than an active one. The proximal surfaces of the teeth act as a lane along which the mesial and distal surfaces of the third can slide. The above force is probably more important in the eruption of the permanent teeth than it is in the deciduous teeth. It is therefore necessary to maintain the normal approximal contact of the deciduous teeth by means of normally contoured restorations in order to make it possible for the permanent teeth to erupt in their normal position. Many cases of malocclusion in the permanent teeth are produced by failure to recognize this fact. The type of malocclusion which results from abnormal force of approximal contact is a troublesome one and one which is difficult to treat.

HARMONY IN THE SIZE OF THE ARCHES which permits the teeth to occupy their proper positions in the line of occlusion. Fundamentally, harmony in the size of the arches means that the amount of tooth structure in one arch is normal and in relative proportion to that in the opposing arch. If there is an extra tooth in one arch or if a tooth is missing then there will be a disharmony in the size of the arches with consequent malocclusion. Proximal caries and premature loss of teeth have a similar effect. The latter will be discussed in greater detail at a later point.

NORMAL ATMOSPHERIC PRESSURE which is exerted during proper respiration on the dentofacial components. When an individual breaths through his nose, each inspiration and expiration exerts pressure

on all side of the nasal cavity and sinuses. This pressure helps to develop a normal sized nasal cavity, but from our point of view the most important fact is that with nasal breathing there is an associated proper action of the muscles of the lips, cheeks and tongue. The result is a muscular balance.

Atmospheric pressure is an active force during all the time that an individual is breathing. If the latter becomes abnormal and the atmospheric pressure is disturbed, malocclusion will result. Class II, Division I malocclusion is thought to be influenced by disturbed atmospheric pressure and abnormal pressure of the cheeks, lips and tongue.

In the above consideration of the multitude of interrelated forces which may promote, or conversely, interfere with development, growth and the establishment of the occlusion of the teeth, it is almost surprising that so many individual cases of normal occlusion are to be observed.

THE EFFECT OF EARLY LOSS OF DECIDUOUS TEETH ON SPACING IN THE DENTAL ARCHES

There was a time around 1930 when prevention of malocclusion, like other types of medical therapy, was much discussed and considerable enthusiasm was aroused about the possibilities of prophylactic orthodontic treatment. Some authors were reporting up to 75 per cent of malocclusion preventable, implying that purely prophylactic measures in connection with some forms of early treatment of positional anomalies, would lead to normal occlusal conditions. ⁽⁹⁾

However, clinical experience and continued etiologic research have shown that malocclusion cannot be prevented in a simple and uniform way. Malocclusion is no disease with a specific causative agent, like a bacterial infection. In the etiologic complex of positional anomalies there enter factors of pathological and local occlusal origin, as well as random variations of form and position. It is clear that there must be little possibility of preventing biologic varia-

tions from appearing. Likewise the human genetic variations hardly fall within the reach of preventive therapy. The pathological and local occlusal causes on the other hand offer some possibilities of prevention.

Lundstrom ⁽¹⁰⁾, in a study of the significance of genetic and nongenetic factors in crowding and spacing, showed that both factors seem to have about the same influence.

It is no simple matter to decide, in the individual case, whether crowding that appears after premature loss of deciduous teeth is due to this loss or whether a coincident hereditary influence is, in fact, responsible.

No one would deny that early extraction produces ill effects on the permanent dentition, but the exact extent of the damage has been the subject of considerable controversy.

One difficulty in deciding the effect of early loss of deciduous teeth relates to the fact that tooth migration after such loss may be of a temporary nature. Rather extreme cases of this type have been published by Kantorowicz ⁽¹¹⁾, showing how a considerable loss of space occurring during the shedding period can be regained on eruption of the premolars.

In order to ascertain the final effect of premature loss of deciduous teeth, it is necessary to follow the case to the end of this period.

Seipel ⁽¹²⁾, demonstrated the effect of the early loss of deciduous teeth by comparing the right and left sides in cases of unilateral extractions. He studied a group of children in whom deciduous molars had been extracted at the early age of three to five years. The average loss of space on the extraction side was not more than 1.9 ± 0.3 mms. This method may be justified as appreciable midline shift is comparatively uncommon. About one-quarter of the cases did not show any effect at all; one-half showed only a moderate effect, (a loss of space of 1-2 mms); and one-quarter showed a large migration with a loss of space of between 3-7 mms.

Breakspear ⁽¹³⁾, in a similar study show-

ed migrations which were greater than Seipel's, which he attributes to the shorter interval before the final examination. (9-11 years compared to 10-14 years in Seipel's cases.)

From the above studies we may say that in spite of extensive and extremely early loss of deciduous teeth, the end result may be normal. As a matter of fact, the loss of space seems to be moderate in a great many cases. In some, however, we get a manifest and possibly a permanent effect. How do we explain this difference?

There are certain conditions which are of importance in appreciating the deleterious effects and their prevention in the event of early loss of deciduous teeth. ⁽¹⁴⁾

1. There is a certain tolerance for decrease of space values in the premolar region, due to the lesser dimensions (2-4 mms.) of the permanent teeth.

2. The contraction varies in different regions of the dentition.

3. The varying degree of migration seems to bear a direct relation to dental space conditions and jaw growth of the individual case.

4. The patient's age at extraction is of importance in discussing the effect of early loss of deciduous teeth, early periods offering less anatomical resistance to migration.

5. The occlusal cusp relations also influence the result, a pronounced cuspslocking retarding or inhibiting the migration.

6. In certain cases there is a reversed migration and increase of space during eruption periods, which compensates for the initial extraction.

7. Increase of space in the extraction region might also occur at the expense of adjacent regions, through crowding out of late erupting teeth.

SPACE MAINTENANCE

The deciduous teeth serve two purposes with regard to the eruption of the permanent dentition: (1) The maintenance of the line of occlusion and (2) the transmission of occlusal force to the jaws, through which growth in width, length, and height is activated. The transmission of sagittal growth pressure and space maintenance are the passive functions of the deciduous teeth.

It is generally agreed, that the most important preventive procedure in orthodontics is the maintenance of the full deciduous arch length, from the distal of the second molar on one side to that of the opposite side, until the teeth are replaced by their permanent successors. The permanent first molar thus erupts in its normal position contacting the distal surface second deciduous molar and should so be maintained until all the deciduous teeth are replaced at about the twelfth year. This we recognize as the great essential factor in the development of normal occlusion of the permanent teeth. If the full length of the deciduous arch is not thus maintained, the permanent molars almost invariably shift to the mesial, which results in too little space for the premolars and canines, malocclusion results, and orthodontic treatment becomes a necessity.

It is apparent from the above discussion that in the event of early loss of deciduous teeth, in those cases where there is a tendency towards closure of space, some means of interception must be instituted. Hence, it becomes necessary to insert a space maintainer.

The space created by extracted deciduous teeth should be checked periodically to determine if closure is taking place and if so at what rate. Kohn ⁽¹⁵⁾, advocates taking a modeling compound impression of the space and adjoining teeth and refitting the impression in the mouth at monthly intervals. If conditions indicate that space closure is progressing while the state of the erupting tooth shows there is danger of space closure, a space retainer should be employed.

For example, if a deciduous molar is extracted between 5-8 years of age, and a radiograph shows a layer of bone over the developing permanent tooth, a space maintainer would be inserted. However, if a deciduous molar is extracted after the age of eight years, and a radiograph shows a well developed bicuspid with no bone overlying its occlusal surface, then no space maintainer is necessary. After the age of ten, it may or may not be

necessary depending on the radiographic picture. In all cases past the age of eight years, the dental age of the patient should be considered, as opposed to his chronological age. The two may differ and the bicuspid may erupt early.

Where there is good cusp interdigitation, the case may be watched for several months, and then a decision as to whether a space maintainer is indicated, is more easily made.

Korkhaus ⁽¹⁶⁾, has pointed out the following conditions which must be met by space maintainers:

1. Maintenance of the desired mesio-distal dimension of the space.

2. Should not interfere with the vertical growth of the teeth and of the alveolar process.

3. The individual functional movement of the teeth must be maintained.

4. The eruption of the permanent tooth under the space maintainer must not be interfered with.

5. The space maintainer must provide mesio-distal space opening through natural growth processes.

It is important to remove the space maintainer as soon as the permanent tooth shows that it is about to erupt, so that the forward shift of the lateral series of teeth, necessary to close the space left as a result of the difference in mesio-distal dimension between the deciduous molars and premolars will not be interfered with.

According to Callaway ⁽¹⁷⁾,

... the only contraindication to the use of a space maintainer where there is a break in the continuity of the dental arch is death. While the life processes continue, there are continual changes and adjustments, particularly during periods of rapid growth. Usually, it is thought that when a deciduous tooth is lost, no matter what the cause, if, after a roentgenogram has been made of the area that the succeeding permanent tooth will not erupt within a period of six months, a space maintainer is needed. This is a safe practice, and an error of commission in the placement of a maintainer is far more excusable than an error of omission.

SUMMARY

The effects of prevention are being more and more realized by both the pub-

lic and the dentist. However, programs of prevention, for the most part emphasize caries control. Unfortunately, malocclusion conditions are not receiving the same importance. A number of surveys have clearly shown that malocclusion is extremely common throughout the world. It is the responsibility of the dentist to ascertain when orthodontic treatment is necessary and to emphasize to the public that malocclusion contributes to caries, periodontal disease, facial disharmony and sometimes deformity.

In recent years, many workers in different branches of dentistry, have contributed to the knowledge of occlusion. The concept of occlusion has changed from one which expressed only the static relationship existing between the teeth when the jaws are closed, to a concept which covers the normal and harmonious function of the entire masticatory organ.

Factors playing a leading role in affecting normal (and abnormal) occlusion of the teeth are as follows: normal cell metabolism, normal muscular pressure, normal force of the inclined plane, normal approximal contact, harmony in the size of the arches, normal atmospheric pressure.

Premature loss of deciduous teeth has been shown to be a contributing factor to malocclusion. It is known that arch length is not maintained in many cases upon premature loss of deciduous teeth. This in turn leads to malocclusion.

Several studies demonstrating the effect of premature loss of deciduous teeth on spacing in the dental arch, were considered. The conclusion reached was that in spite of extensive and extremely early loss of deciduous teeth, the end result may be normal. However, in a certain number of cases a deleterious effect results. Several conditions which offer a possible solution to the problem were outlined.

The importance of space maintenance upon premature loss of deciduous teeth was then discussed and the indications and contraindications for the use of space maintainers was outlined. A number of

cases were discussed and the conclusion reached was that when in doubt, it is much better to insert a space maintainer than not.

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Desensitizer for dentine and painful gingival pocket

by F. C. HUSBAND, D.D.S., Toronto

A saturated solution of Aluminum Chloride is a very effective means of desensitizing dentine. Sensitive areas around the necks of teeth and cavities, not near the pulp, may be desensitized by dampening a small pledget of cotton in the solution and rubbing over the area until the sensitiveness disappears. If the cavity is deep, apply only to margin of cavity. In some cases there is a momentary reaction of pain but that is short lasting. The patient should be advised that he may feel the application and he will usually tolerate the passing discomfort without complaint.

Another very good way to treat sensitiveness around the necks of teeth is to wind a wisp of cotton around a tooth pick and hold in artery forceps. Break

off excess tooth pick then rub dampened tooth pick around sensitive areas until sensitiveness disappears. One can apply under free margin of gum with no harmful results.

This solution may also be applied in deep gingival pockets, especially when the bottom of the pocket is painful. Use on a tooth pick covered with a wisp of cotton and held in artery forceps. Rub gently until sensitiveness disappears. Gratifying results may be expected from this treatment.

To make the solution:—Aluminum Chloride will dissolve in carbitol or in readily available "Sentesin" which contains in addition a desensitizer (Benzocaine). Pour "Sentesin" into 1/2 oz. bottle, add Aluminum Chloride to saturation and keep ready for use.

Obliteration of the apical third of the canal from the apex of the root

By LIONEL METRICK, B.A., D.D.S., Ottawa, Ontario.

HISTORY

An attractive lady patient, about 30, reported discomfort in the area below her left nostril.

EXAMINATION

Figure 1 shows osteitis around the apex of the upper left central caused, seemingly, by inadequate obliteration of the canal. The patient was satisfied with the shade, shape, and service of the post crown in this tooth.

OPERATIVE PROCEDURE

Xylocaine was deposited in the palatine foramina and labially from cuspid to cuspid. A large semi-lunar flap was raised and the labial bone over the area of osteitis removed with a Henahan bone drill. The root tip was then bevelled with a large tapered fissure burr to bring the canal into view. The area was then thoroughly curretted and aspirated to improve visibility. The canal was then filed

with a series of bent canal files, nos. 1 to 5; irrigated with a 1% chlorazene solution, dried, and filled with a piece of silver point buttered with canal cement. This filling can be seen in figure 2. The peri-apical area was then irrigated with sterile water and the flap sutured. No penicillin was inserted because the patient reported an unfavourable reaction to a penicillin injection a year before.

POST-OPERATIVE EXAMINATION

An x-ray taken 9 months later, figure 3, shows healthy bone at the apex.

COMMENT

The alternative to the foregoing obliteration procedure embraces: (a) surgical removal of the root, (b) an immediate removable partial to permit healing and recession preparatory to (c) a fixed bridge. Obliteration is simpler, faster, and costs the patient a fraction of the alternative removal procedure.



FIG. 1



FIG. 2



FIG. 3

Multiple unerupted permanent teeth

By J. EWART WRIGHT, D.D.S., St. Catharines, Ontario.

A woman, approximately 40 years of age, presented for what she thought was a small root extraction in the maxillary right central area which was causing discomfort under her denture.

CLINICAL EXAMINATION

Patient was wearing full upper and lower vulcanite dentures which were satisfactory—her gums and mouth condition could pass as normal and they had a healthy colour.

RADIOGRAPHIC EXAMINATION

Periapical radiograms were taken and a number of apparently fully formed unerupted teeth were found to be present. Occlusal films were taken of both arches. In the maxillary arch all teeth from the second bicuspid forward were present. (Fig. 1). The mandibular arch contained the unerupted lower anterior teeth. (Fig. 2).

FAMILY HISTORY

This patient was born in England and lived there until a few years ago. She stated that she had her front teeth removed at about 12 years of age and partial dentures were inserted. When she was approximately 20 years old, she stated that she had all posteriors removed

and full dentures were inserted which have been satisfactory for the intervening twenty years.

It is undoubtedly true that the teeth removed at 11 or 12 years of age were deciduous and that the insertion of a partial denture prevented the eruption of the permanent teeth.

Other members of this patient's family have exhibited the same phenomena as a brother in England recently had many unerupted teeth extracted after wearing complete dentures for nearly 30 years.

TREATMENT

The tooth giving discomfort, a fully formed central, was removed but no further surgery was performed at the request of the patient. The patient stated that her dentures were comfortable and efficient, that she enjoyed good health and had no desire to assume any expense or discomfort in having the remaining unerupted teeth removed.

This case, while admittedly unusual, indicates the importance even in a seemingly edentulous mouth of taking at least two occlusal radiograms prior to proceeding with prosthetic restorations.

221 St. Paul Street.

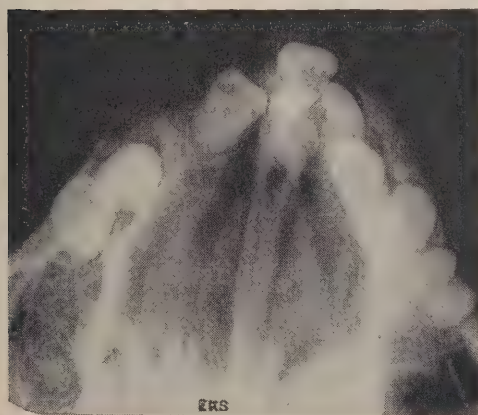


Figure 1

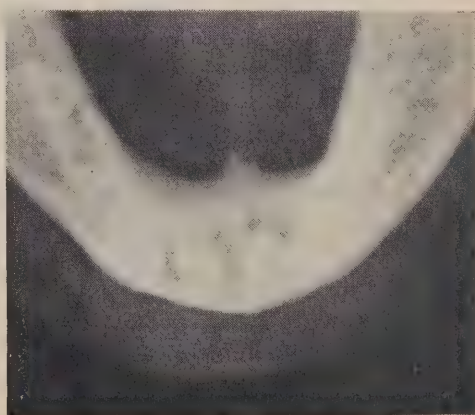


Figure 2

A method of splinting for a fracture of mandible

By G. B. RICHMOND, D.D.S., Wolfville, N.S.

Within this article you will find sketches illustrating a form of fracture cast and appliance which were designed for a case of mandibular fracture in the ramus area.

This appliance resulted in a complete repair of the fracture and a perfect occlusion of the teeth.

The case in point was the result of an auto crash and presented a very difficult problem of wiring. I, therefore, determined on the following appliance which was very simple to make, and did not demand a great deal of adjustment.

The development of the splint is as follows:

1) Secure two narrow bands of chromel long enough to reach from the temporal area to the region just below the zygomatic process.

2) Two more chromel (or other metal) bands are cut long enough to reach from the sub-mandibular area and overlap the ends of the upper bands approximately by an inch.

3) Cut holes in the one end of the upper bands to permit passage of small bolt.

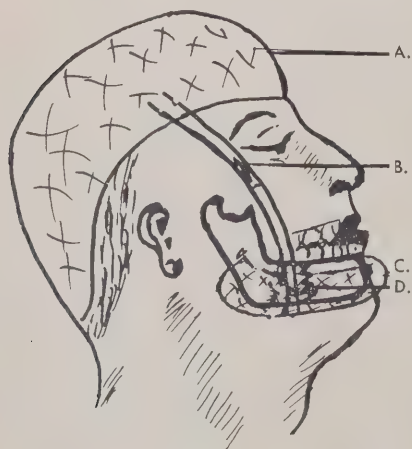


FIGURE 1

A — Plaster Cap C — Mandibular Cast
B — Metal Bands D — Fracture

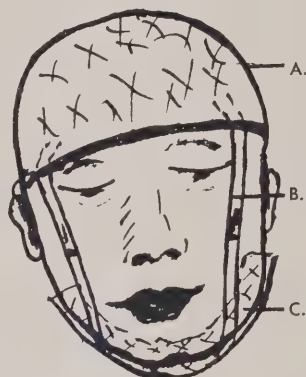


FIGURE 2

A — Plaster Cap
B — Metal Bands, Slot & Bolt
C — Mandibular Cast

4) Cut slots in one end of each lower band large enough to pass bolts, and about one or one and one-half inches long.

5) Make a paper pattern of head and make plaster cast of head down as far as the eyebrow area of plaster tape.

6) Prepare cast covering the mandibular area from side to side, and running to sub-mandibular area. This also is made from linen strips dipped in plaster.

7) Place cap and adjust upper bands to fit contour of the head and cheeks; apply new plaster to head cap, attach upper bands and allow to set.

8) Fit the lower bands (with slot) so that the slotted end overlaps and coincides with the hole in the band attached to head cap, attach lower bands and allow new plaster to set.

9) Place cap with bands on head; place mandibular cast in place; insert bolt (with its head cut as thin as possible) through holes and slots on each side; tighten nuts on bolts slightly; adjust to maximum pressure; tighten nuts.

10) Pass gauze between cheek and head of nut for comfort.

As there is always considerable inflammation and swelling the nuts will require to be loosened, and cast adjusted upward as the swelling subsides and longitudinal distance decreases.

DISCUSSION

This contrivance is very simple to make and apply, and does away with all the messy and painful application of interdental wires which cause soreness, potential exfoliation of attached teeth and does

not require the lengthy periods needed for adjustment of wires.

CONCLUSION

This method can be applied to almost all types of simple and compound fractures of the mandible and some types of maxillary fractures.

Teeth are held in an absolutely immobile position, but free access to all parts of dentition for the required prophylaxis is allowed.

Suggested procedure in the adaptation of the S. S. Crown to the Broken Down Crown or the Devital Deciduous Tooth

Presented in motion picture form to the Vancouver Dental Society, February, 1956, by
DRS. H. W. HELM, J. D. YEO, J. A. MICHAELSON and R. A. MITCHELL of the
Inter-city Paedodontia Study Club.

1. From an x-ray of the tooth determine the m-d measurement of the crown and choose a S. S. crown which is the next largest dimension. Where necessary provide clearance between teeth with a separating disc and also reduce the cusp points slightly. Try the crown on the tooth to see that it slips on easily. Make a hole on the li of the crown toward the o. By doing this now it is easy to determine the various surfaces of the crown, later it provides an escape hole for the cement and a point to rotate the crown if necessary.

2. With a pair of dividers, measure in the mouth the coronal height on the m,d, li,b, transfer these measurements to the crown and mark the contour required for this particular tooth. Using a pair of crown and bridge scissors, trim the crown to this marking and check it in the mouth to see that it reaches to just below the gingiva all the way around the tooth.

3. Clev-dent or SSW 115 or some similar curved beak plier is used to turn in the gingival skirt so that the crown takes on the shape of the clinical crown. The S.S. crown will then grip the tooth at the gingival only, snapping into position when

placed on the tooth and resisting dislodgement when secure on the tooth. Make any final adjustments to the contour that are necessary.

Insertion and Cementation of the S.S. Crown

1. For one to two minutes before the cement is mixed, etch the crown of the tooth with the liquid. The cement used for this technique is PETRALIT. The purpose of this etching is to produce adhesion between the cement and crown.

2. Mix the petralit cement in the same manner as a silicate mix but not too thick. Place the cement in the excavated areas of the tooth and in the S. S. crown and then place the latter on the tooth. Press into position with finger pressure.

3. Remove the clamp and rubber dam and have the patient bite the crown into position in so far as it is possible. If further positioning is necessary have the patient exert pressure on an orange stick, cotton roll or plastic mirror handle.

N.B. If it is necessary to use a 2nd primary molar crown for a large 1st remove the 0 groove.

On 1st primary molars remove the b bulge with a stone before attempting to try on crown.

Professional public relations

Address of the President, REYBURN R. McINTYRE to the Annual Meeting of the Canadian Dental Association, June 4th, 1956.

Today I would like to present a phase of dentistry that is somewhat difficult to define, yet vitally important to the future welfare of our profession. I propose to speak about ethics and with ethics is coupled a somewhat recently formed designation called "Public Relations"—hence the title of this address, "Professional Public Relations".

My first observation is,—does any profession now occupy the position or esteem that it did in the past? Many will recall that a few decades ago, there were relatively few professional people in a community, and these were generally held in high regard. It is not so apparent today. Perhaps this is but a trend in our rapidly developing economic and social progress.

Daily we see in the press, the words "Public Relations" and we associate these words with industry and commerce. In the last world war, the various services developed what was known as "Service Personnel"—this was "Public Relations" in action.

As we ponder over these words most of us have a different concept of their meaning, and many consider them far removed from professional activity. The purpose of these remarks is to re-direct your thoughts, and assess our present position. If found unfavourable, an early start should be made towards correction.

Sir Francis Bacon, who, as you all know lived many years ago, wrote these words: "I hold every man a debtor to his profession". Every man is a debtor to the world; to his parents; to his schoolmasters; to his friends; to his employer and to his patients. To them he owes his existence; his knowledge; his happiness and his daily bread. To his profession he has another debt—that due to generations past,

whose integrity and skill have given his calling the knowledge and reputation it now enjoys—to them he owes his status as a worker and a thinker. "Profession" carries a wider meaning now, than it once did, and "Professional status", in common talk, is extended to many functions in industry and commerce, but it is not won lightly; a long record of public responsibility and private service must come first. How can such a debt be repaid?—*only* by increasing, and maintaining the standards, which were those of yesterday.

May I suggest that "Professional Groups" frequently mis-interpret "Public Relations". Is not public relations predicated on the attitude of a profession to the public? We at least owe a responsibility to the State that grants us a licence, which never forget, is a special privilege, but we particularly owe a responsibility to those who entrust themselves to our care and accredited professional skill. If we fail here, can we complain if some of our privileges are circumscribed or removed by public opinion?

We are concerned about the Dental Profession, which is frequently referred to as making rapid progress. But is this progress not referring to newer techniques, better equipment, and perhaps improved financial return? These improvements are materialistic, but nonetheless desirable. May I ask are these the only factors that should be considered? What about the attitude of the dentist toward those whom he serves? To whom do the younger men in the profession look for guidance and leadership? Changes in all professions are not only desirable but imperative. If these matters are of importance, should not all organizations in den-

tistry have them under constant consideration?

In the commercial and industrial fields, they resort to the various media of advertising, and the employment of public relations personnel, as indicated by the advertisement of the tin-smith who states: "It is impossible to become a 'sheet-metal-worker' overnight. It took us years to gain our measure of experience in our trade. You cannot build a reputation for expert, honest workmanship, overnight. The long list of satisfied people we have served, shows that those we serve in the future *'will be satisfied'*."

Another manufacturer says: "Like his fortune a man's integrity grows in direct proportion to his devotion to his work. You need never preach honesty to a man who loves his job. Such a man throws all the energies of his body, and all the sensitivity of his soul into achieving a product of value. Invariably, an unspoken instinct takes care of his honour. Such a worker will not adulterate his product, nor slight his responsibilities, not because of what others may say, but because of his own pride and self esteem. And just as this resoluteness creates honest work, so also does it permeate the man's entire life, governing all he says and does".

It is not suggested that Dental Schools are negligent in the initial instruction of professional conduct, but what agency have we to develop this basic training within our profession? Commercial and industrial organizations supply to many of their senior executives, "Advisors" in "Public Relations". The health professions appear to be resting on their former status of high ethical standards. Is this adequate? Recent surveys indicate an unfavourable trend.

How has this come about, and why is the dental profession not held in higher esteem? Our service being of a personal nature, patients form an opinion of us personally, and perhaps unknowingly assess our skill, surroundings, and appraise the fee for services rendered. Several of these patients will have separate and individual opinions, but they do form

"Group Opinions", which added to other "Groups" will form the "Aggregate Opinion" of our profession, on a Local, Provincial or National level. It is therefore logical that the more honestly and faithfully an individual service is rendered, the more favourably our profession will stand in "Public Esteem".

Now what is "Esteem"? It is generally meant: "Looking up to" — and is best earned by a service, character and deed. "Esteem" is objective, and rises in other lives, and is directed to or away from us. The "Esteem" in which a dentist is held is founded on the manner, value, and sincerity of the service rendered. This could be called public relations, within a profession. Public relations has been described as a new science, or phenomenon of the 20th century. For me to try and describe a phenomenon, would but carry us into further confusion.

You will see from the foregoing, how important a part each of us plays in the performing of our daily tasks, and the developing of public opinion, or esteem.

From the time we entered the profession, our duty has been to serve honestly, teach, and impart knowledge toward the prevention of disease. As a profession we should ever keep in mind the difference between a business and a profession. A business is established essentially by a motive of profit, whereas in a career in dentistry, the primary objective is "Service". In a business we have the evident exchange of values. In a profession we deal with intangibles. A dental student gives tangible dollars for intangible knowledge. Yet some of the best service rendered is the imparting of that knowledge to patients—the remainder is applying both skill and knowledge to any service rendered. Therefore the more a service rests on honesty and integrity of the server, the greater is the opportunity to rise in "Public Esteem". The public may justifiably expect this high standard from any professional group.

The highest aim of human endeavour, is the dedication of one's life to the service of mankind.

Dr. Kenneth M. Johnson installed as President of the Canadian Dental Association

Dr. M. H. Garvin of Winnipeg, a Past-President of the Canadian Dental Association served as Installing Officer and expressed himself in the following words:

"It is not only an honour but an unusual pleasure for me to install the new President of the Canadian Dental Association.

"In 1948 a man who had previously been a partner of mine for a number of years, a man who is internationally known for his research in the field of denture prosthetics, Dr. Howard Merkeley, was made President of the C.D.A., and now a man who has been a partner of mine since graduation in 1913—forty-three years ago—just a stone's throw away from half a century, is about to assume the high office of President of our Association, Dr. Kenneth M. Johnson.

"Dr. Johnson was born in Strathroy, Ontario. His mother's ancestors were United Empire Loyalists. His father was a distinguished educationalist.

"He was graduated from the University of Toronto in 1913, when the popular slogan was 'Go West, Young Man, Go West', so he came west at a time when this old world was beginning to smoke around the edges and World War I erupted almost before he could get his bearings. However, he came directly to our office following graduation and had time to get his bearings before going overseas in the World War.

"After hostilities were over he returned to our group where honesty, thoroughness, faithfulness and dependability have characterized his efforts through many years of testing. His professional life has been a continuous record of loyalty and integrity and he has preserved con-

sistency with himself and an unswerving and unselfish fidelity to his convictions. If time has set any mark upon him it has preserved in all its freshness the youth of the soul.

"During the years, Dr. Johnson has been President of the Western Canada Dental Society, the Manitoba Dental Board and the Winnipeg Dental Society. He is a Fellow of the International College of Dentists and at this time is President of Section 2 of this Organization, comprising Canada, the West Indies, Bermuda, the Bahamas, and the Barbados.

"Dr. Johnson, I have but imperfectly expressed the thoughts to which I have not been able to deny utterance on such an occasion as this.

"Knowing you as I do, I know that under your leadership the Canadian Dental Association will continue to develop a great spirit, a spirit which will always be kept because you will look to the right fountains for renewed strength. Discouragements may come when the only thing that will save you will be your enthusiasm for your work, a love for it, and dependence on the One who reigns above. Under your leadership, I am sure that our Association has great days ahead of it, great days of accomplishment, great development of the ideals of our noble profession.

"And so I say:

"Go forth to conquer.

"Go forth as a worthy successor to those past presidents who have worked for a better future for our Association—a worthy ambition which ripens as it rolls. When we make the most of what we do, we make the most of what we are.

"What remains but to wish you a long

continued life, crowded with health, with happiness and with honour.

"Live on, Ken, till you hear your children's children rise up and call you blessed.

"Live on for the sake of your friends and associates for whom life would lose much of its lustre in losing you as a companion and friend.

"Live on for your own sake that you may enjoy the better day.

"Live on for the sake of the Canadian Dental Association.

"Dr. Johnson, I now install you as President of the Canadian Dental Association for the coming year.

Members of the Canadian Dental Association, I now present to you the new President of our Association—Dr. Kenneth M. Johnson, of Winnipeg."

Dr. Johnson, having been installed as President, then addressed the meeting:

"In accepting the high honour which you have conferred upon me I realize that it involves great responsibility—responsibility which can be met only with your constant co-operation and support. It is knowing that I will receive these that makes acceptance possible.

"It is no easy thing, Ladies and Gentlemen, to succeed a man of Dr. Reyburn McIntyre's splendid capabilities and accomplishments, or indeed the line of great men who have preceded him in this office, of which you, Mr. Installing Officer, are one, and in which you hold such an honoured position.

"I would have you know, Harry, that I am proud that you, who have been my predecessor, my associate in practice, and my friend for over forty years, who perhaps better than anyone else knows my faults and failings and have been too kind to mention them, I say I am proud that you are making this installation, in this Association which I know ranks first in your professional affiliations.



DR. KENNETH M. JOHNSON

President, The Canadian Dental Association

"Perhaps the one who is most worried about my entering upon these duties and perhaps not without reason, is my wife, whom I would like you all to meet.

"One of the happy rewards, of being active in the Association is the number of friends I have made from every part of Canada and I take this opportunity to invite every one here to come to Winnipeg next June when we meet along with the Western Canada Dental Society, of which Dr. Warren J. Wylie is President and is among you. I want you all to come and be with us at that time.

"And Mr. President, when that meeting is held and I am recounting my year as you have done yours, my sincere hope is that I will be able to give nearly as good an account of my stewardship as you have done.

"So, Mr. Installing Officer, realizing as I do that in reality it is Manitoba, the Province which I have the honour to represent, that is being recognized, I am proud and honoured to accept the office of President of this Association."

Dr. Reyburn R. McIntyre is presented with the Past-President's Jewel

Dr. M. H. Garvin, after installing the newly-elected president, presented Dr. Reyburn R. McIntyre with the Past-President's Jewel.

"I have another happy duty to perform for it is now my pleasure to present the Canadian Dental Association's Past President's Jewel to Dr. Reyburn R. McIntyre, of Calgary. I have been commissioned to photograph, develop and finish the Past-President of the Canadian Dental Association in five minutes!

"You, Dr. McIntyre, have been our leader during the past year. You have sacrificed much for the good of our beloved profession and you have inspired all of us to try to reach the pinnacle of achievement in the field of dental public health, dental public relations and the general welfare of the dental profession. We thank God for showing us again that human love, faith, fidelity and sacrificial service — like day and night, seed-time and harvest — shall never, never fail.

"Your intellectual excellence, noble character, lofty ideals, honest service, conscientious labour, public spirit and a loyalty which fosters only what is worthy of an enlightened profession, marks you as a great citizen and a great dentist, so today I would blend your name with those great leaders of dentistry whose glorious service to dentistry has been so well

established, whose memories are a benediction.

"You have handed down to a grateful profession the richest legacy which man can leave to man, the memory of a good man, the inheritance of a great example. We know that such men as you fight the campaigns of the future over and over in their thoughts while all the world is at peace around them — the roads they plan are broad and straight for the march of other feet, the sword they forge lies ready for another hand, the spirit forged still lives to lead.

"Happy is the man who makes clear his title deeds to the royalty of genius while he yet lives to enjoy the gratitude of those whom he has served. You, Dr. McIntyre, have made abundantly clear your title to the royalty of genius. Your office has been worthily administered.

"Today we would do you honour for your great contribution to Canadian dentistry while occupying the position as President of our Association. So long as we have men like you to lead us, dentistry will not fail, because through weakness we invited it, or through indifference we permitted it.

"It is now my pleasure to present to you the Canadian Dental Association's Past-President's Jewel, and I am sure you will continue to serve and inspire us in the years to come.

Dr. John W. Clay made Honorary Life Member

Dr. R. R. McIntyre presented an Honorary Life Membership to Dr. John W. Clay

It is particularly pleasant for me today to have the honour of making the presentation of an Honorary Life Membership to Dr. John W. Clay, of Calgary.

I am sure that many of you, if not all of you, know Dr. Clay. He was born in Yorkshire, England. Many of you do not know that. He came to Canada at an early age and attended various colleges. Following that he attended the University of Pennsylvania from which he first graduated in dentistry and very shortly after that he graduated from the University of Toronto.

For a little time he practised in London, Ontario, then knowing the hopefulness of the West he came, quite some time ago, to Calgary, and has been with us, fortunately for dentistry in Alberta, ever since.

He has been Registrar-Secretary of the Alberta Dental Association. He was President of the Canadian Dental Association some years ago. He has been also President of the Western Canada Dental Association. At present he holds the position of Honorary Lecturer at the University of Alberta. He is a Member of the Holy Cross Hospital in Calgary. He is a Fellow of the International College

of Dentists and during the last year has been President of that group in Canada.

During 1950 the University of Alberta saw fit to confer on Dr. Clay, the Honorary Degree of Doctor of Laws.

I assure you, Ladies and Gentlemen, this is one of the finest things that has happened to me during my year as President of this Association. This, you may not understand, is the highest honour that Canadian dentistry can award. I assure you it is with the greatest pleasure that I now confer on Dr. John Clay, Honorary Life Membership in the Canadian Dental Association.

Dr. John W. Clay makes reply

I thank you from the bottom of my heart. In receiving this great honour I am particularly pleased because of three things. One, that it comes to me in the Province of Alberta, where I have lived so many years.

The second, that it is given to me by a very great friend, Dr. McIntyre, as President of the Canadian Dental Association.

And I should also like to say that I appreciate sitting on this occasion beside Dr. Harry Garvin, who has been, if I may make one personal remark, among my many friends one of the friends I have looked up to during these many years as the first among this group of



CALGARIAN MADE HONORARY MEMBER — Dr. John W. Clay, right, of Calgary, was made an honorary member of the Canadian Dental Association at the joint meeting of the Canadian and Alberta Dental Associations at Banff Springs Hotel in the Canadian Rockies. He is seen here receiving congratulations from Dr. R. R. McIntyre, of Calgary, immediate past president, shortly after the honor had been conferred.

The peaks of 10,000 ft Cascade Mountain rise in the background.

(Canadian Pacific Photo)

many men whom I am pleased and happy that I can feel are my friends.

If I may have a moment or two, Dr. McIntyre, I should like to say a word about the progress of dentistry. Many years ago, as a very young man, I graduated. At that time I must say that I felt that probably I knew about all there was to be known about dentistry. I practised for a few years and I woke up suddenly to the fact that the train of progress was going by and I was in very great danger of being left standing at a way station.

I tried to the best of my ability to remedy that situation. At that time dentistry had a pretty good basis of physiology and anatomy and various basic sciences. The practice of dentistry was to a great extent imperfect. There were some men like Dr. G. V. Black of long ago

who set down certain principles which we still know to be right, and we revere him because he set some very fine work before us which today is the basis of work that dentists are doing throughout the world. That Sir, is a tribute to a very great and early American dentist.

Time went on, and during my practice it is a fact that the basic conceptions were changed by study and research and many of them completely altered. It is a fact that the methods of practice and the techniques of dentists also changed on the basis of scientific development, on the basis of research, and on the work of men in the dental schools.

Today we are graduating dentists, young men, many of them here today, and all throughout Canada, coming from what I think are very fine schools, and we should help these schools all we can.

Now, I suppose those men, being a lot smarter than I was when I graduated, realize that dentistry is a moving train of progress, and I don't think they will be caught as I was in my first few years, being left behind. I think I may venture to say that in thirty or forty years from now when these men have had the long experience of practice which I have had, I think that they will find that dentistry has moved on to another plane and that they have had to keep going to dental conventions, and think and study and go back when they can to men who are teaching in the schools, so that they will not be left behind as I so nearly had been.

Now, I can only express to you that I am tremendously impressed and very humble at this great honour which is being given to me. I suppose that I shall remember this and I know I will, as a great moment of my life. I look on it as a presentation from the Officers of this Canadian Dental Association. I look on it also, if I may say so, Sir, as a presentation which I hope and believe is something which comes from my friends in the dental profession. With humility I thank you for this great honour.

RESEARCH

FOREFRONT OF CANADIAN DENTISTRY

Chemistry and Dental Research in Canada

This reviews some of the papers on chemistry in dental research that have been sponsored in Canada by the N.R.C. Associate Committee on Dental Research.*

JAMES J. RAE, F.C.I.C., Department of Chemistry, University of Toronto

The National Research Council authorized the appointment of an Associate Committee on Dental Research at a meeting held on December 15, 1944. Under the aegis of this Committee a great many research projects have been initiated and although they do not embrace all dental research in Canada they do provide us with a basis for a brief review of chemistry and dental research in Canada. Up to last year 27 papers were published by research workers who obtained assistance from this Committee and in this article I intend to review the contents of these papers which are sufficiently chemical in nature to be included in the above title.

A paper entitled "A Comparison of Nine Local Anaesthetics", by H. S. Hamilton, B.A. Westfall and J. K. W. Ferguson of the Department of Pharmacology, University of Toronto, showed that these may be placed in the following order of toxicity when administered intraperitoneally to white mice:—procaine, metycaine, monocaine, naphthocaine, butacaine, octacaine, cocaine, pontocaine and nupercaine. They also determined their effective concentrations and concluded that two relatively new drugs, naphthocaine and octa-

caine, with high relative ratings, should be investigated further.

O. J. Walker of the University of Alberta published two papers on different subjects. The first, entitled "*The Corrosion of Cobalt Chromium Alloys in Commercial Cleaning Agents*" tested the commercial effects of Polident, Sterakleen and Hygeol on such alloys as Denchrome, Durallium, Ticonium and Vitallium by themselves and joined in pairs by means of 18 K gold solder. Hygeol attacked these alloys to varying extents and they advised against the use of hypochlorite cleaning solutions for artificial dentures containing cobalt and chromium alloys.

Dr. Walker's second investigation resulted in a publication entitled "*Determination of Fluoride in Water by the Aluminum-Hematoxylin Method*." In this method sulphate and phosphate interfere to a smaller extent than in the other methods. The upper limit for use is 1.5 p.p.m.

Doreen Smith of the Food Chemistry Department, University of Toronto, published two papers on fluorides. The first was a study of fluorine and human diet in which she showed that the fluoride content of the normal adult diet is quite low but the ingestion of tea or high-

*Reprinted from *Chemistry in Canada*, October 1955.

fluoride waters increases it greatly. The milk in Stratford (high fluoride area) had a slightly higher F concentration than that in Kitchener (low fluoride area). Certain baby foods containing bone meal have high F contents.

Teeth extracted from a low-fluoride area in general have lower F content than teeth from a moderate fluoride area. Differences in F content of sound and carious teeth were not apparent. There is a gradual increase in F content of teeth with age when exposed to dietary fluorides.

D. R. Christie of the Ontario Research Foundation did a series of investigations on the properties of acrylic dentures and acrylic fillings. Out of this work came a method for the rapid processing of such dentures which reduces the time necessary for curing, and eliminated porosity. It was also found that if a suitable matrix is used volumetric shrinkage of acrylic resins can be localized to the free surfaces. This can be compensated for by using an excess of resin and then grinding to shape afterwards.

A group of researchers at the University of Montreal, including among others Dr. Belanger, Dr. Leblond, Dr. Lussier and Dr. D'Iorio have done much valuable work using radioautographic techniques to study tooth and bone formation. Five papers have been published assisted by grants from the National Research Council. Their findings are difficult to summarize since they are often histochemical in nature. They have published an excellent review article entitled "*Radioactive Isotopes in Dental Research*."

My own association with the committee extends back almost a decade and during this period seven papers have been published under the blanket topic of "*Chemical Mechanisms in Dental Caries*".

Early studies indicated that the "protective effect" of fluoride on acid decalcification of enamel was not due to the absence of attack by the acid in the presence of fluoride but was due to a deposition of CaF_2 on the tooth. The reduction

in solubility of powdered tooth enamel in acid by the addition of fluoride is also attributed to the deposition of CaF_2 . Other salts containing cations or anions that form insoluble salts with either calcium or phosphate ions will also decrease the apparent enamel solubility and "protect" the teeth from acid attack.

A chemical test that would enable one to distinguish with assurance between saliva from a caries-susceptible person and caries-immune individual would be a valuable asset in dental research. Numerous claims have been made in the literature for the discovery of such a test. However in our work we have been unable to find any significant correlation between the degree of caries in a person's mouth, as measured by the lacto bacillus acidophilus count, and:—

- (1) the calcium phosphate content of salivas after shaking with calcium phosphate as claimed by Karshan,
- (2) the phosphatase content of the saliva,
- (3) the buffering capacity of the saliva,
- (4) the viscosity of the saliva,
- (5) the ammonia produced on incubation,
- (6) the urease content of saliva.

All saliva produces ammonia on standing and due to the ammoniated dentifrice craze it was decided to investigate the conditions for its production. Glucose and fluoride were both found to inhibit ammonia production whereas urea stimulated ammonia production. The addition of both urea and glucose to saliva produced even larger amounts of ammonia than when urea alone was added.

This review indicates that much has been done on the subject of chemistry and dental research in Canada. However many problems remain to be solved and workers are needed to study from a chemist's viewpoint the effect of fluorides on the human body and the physiological and pathological processes connected with the science of Dentistry.

ETHICS

Obligations to the public in general

This review of Section VIII, of "Guide to Professional Conduct" attempts to point out a few highlights on the question of "Obligations to the Public in General".

The sentence "Too many men feel that there is one set of moral standards to be used in relation to colleagues, and an entirely different set of values in the matter of public relations" seems somewhat confusing.

Is it that among gatherings of our colleagues, we have a most high sense of ideals of creating and rendering masterful services to the public but actually rendering little better than the ordinary, or is it that in rendering perhaps even the best of dental service we build up our ethics, as the "Great I am" in the eyes of the public, almost refusing to admit that there are others in the same profession or specialization of same, and then carry such an attitude to meetings with colleagues. Possibly there are other analyses of this sentence mentioned. It would seem that the use of the words "Moral standards", is particularly placed there to bring to mind the basis of morals — the four goodnesses or virtues, Courage — Wisdom — Temperance and Justice. The man who can blend his life and the lives of others with these four, in necessary and proper doses, is indeed a man to be respected and admired.

Among obligations to the Public the privilege and benefit of consultation, with the patient's consent, should be more frequently used and encouraged, not necessarily specialist consultations, but

the wider experience and counsel of the older practitioner, or the newer techniques of the recent graduate.

Criticism and humour have been passed, of course, with regard to such practice. However, since years of custom and usage have practically silenced these as far as medicine is concerned, the public now accepts the practice, and more than often expects such in difficult cases, and sometimes in not so difficult decisions.

The public is educated to the idea; the problem would be to educate the dental profession more in this direction. In the larger centres dental specialization is fairly widely practised and, of course, flourishes mainly on the respected referrals from general practitioners.

Perhaps a word of warning should be inserted here: let us not become a too specialized profession. Many medical men today see what they could not realize some twenty years ago — the very limited practical abilities and practices of a profession, with the very necessary general practitioners becoming almost the rare member of the specialized fields.

The reasonable use of consultations with practitioners in the same field could develop a wider and better service to the public, and a much more extensive exchange of views locally. It would seem only natural that the dentist should be a leader in efforts towards improvement of the dental health of his community. Variance of opinion on dental questions certainly is necessary in clinical discussions, but in public presentations it only

causes confusion and does not strengthen the profession in the eyes of the public. Press releases and dental public speeches, should be checked with the local, provincial or national public relations committee of your associations. The patient, in the end, has more respect for agreement than disagreement by professional men in public utterances. In other words, controversy on dental subjects should be kept within the societies, and not presented to a public who knows little or nothing about the subject.

Again, "The dentist should make it his duty to take an active interest in the affairs of his community". The word "interest" is very aptly used, rather than the word "part".

Here, intention is worthwhile considering. The dental office cannot be left to run itself or be operated by an aide such as can be the office of the business man. Therefore, the dentist should consider giving time, interest, effort to the community in a manner which will not be detrimental to practice or remuneration. This is a point that must be tactfully placed with solicitors of community projects. The individual dentist must assess his own idea of his obligations to the public, and they will naturally vary a great deal. However, careful thought should be given to this portion of professional conduct, and actions therefrom must be tempered with considerable thought.

THE EFFECTS OF CHEWING GUM ON DENTAL CARIES AND ORAL HYGIENE

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STATEMENT OF THE RESEARCH COMMITTEE OF THE CANADIAN DENTAL ASSOCIATION

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1. In response to several inquiries, the above committee has reviewed the scientific studies (references available) dealing with the effects of chewing gum on dental caries and oral hygiene.
2. The paucity of research in this field precludes a conclusive evaluation of the effects of chewing gum on oral health.
3. The committee considers that any decision concerning the beneficial or undesirable effects of gum chewing on oral health must await comprehensive investigations.

HOSPITAL DENTAL SERVICES

"Why and how?"

In 1953 the Joint Commission on Accreditation of Hospitals held a conference with the A.D.A. Council on Hospital Dental Service and the A.D.A. Special Committee on Problems in the Field of Oral Surgery. As a result of this conference the Joint Commission on Accreditation of Hospitals agreed as follows: "that hospital by-laws concerning the dental staff be interpreted to give dentists the privilege to admit and discharge patients and that the hospital staff be known as a medical and dental staff."

When we bear in mind that the member organizations of this Joint Commission on Accreditation of Hospitals include The American College of Physicians, The American College of Surgeons, The American Hospital Association, The American Medical Association and The Canadian Medical Association it would be reasonable to conclude that their action in 1953 clarified the status of dentists on hospital staffs throughout the United States and Canada.

Although it is recognized that provincial legislation does not necessarily follow actions by established voluntary groups such as the above, it is still difficult to understand that hospital administrators are now reluctantly informing long established dental services in their respective hospitals that because of government directives said dental services are in jeopardy because dentistry and dentists have no status in hospitals according to Provincial Hospital Acts.

This action is even more difficult to comprehend when one considers that

general hospitals seem to be the present and coming centres of health and professional education activities in communities, and that naturally any well-rounded program should include dentistry and its specialties. Also that whereas Medical education has largely ignored oral surgery, oral diagnosis and oral medicine, Dentistry, on the other hand, has made significant strides in these fields in recent years.

Why then do we find ourselves in this present dilemma? Can it be that to this day, hospital authorities have not shown a ready acceptance and appreciation of the integration of dental service into hospital procedures?

Can it be because of ungrounded fears and suspicions of a few that dentistry will overstep its boundaries because of the recent advances it is making in oral surgery training and education?

Can it be that hospital training must be stepped up before Dentistry can be judged adequate to the needs of hospital dental service requirement?

Is it that Dentistry must set up rigid requirements for hospital dental appointments and Specialty Boards for specific fields?

The answers to these few questions and many others must be sought before this untenable situation can be cleared up. The answers can only come through closer cooperation and liaison between the two professions. Surely this can only make for better service to the public, and greater respect for the health services concerned.

EDITORIAL

Teeth and general health

"In all the fuss and fury over fluoridation and its possible, if mythical dangers, the importance of tooth decay itself as a menace to health has been largely forgotten. The important thing about tooth decay is that it is a disease which destroys teeth and it is a rather grim experience for the human who has to go through life minus a large part of the machinery with which nature provided him to prepare food for digestion. Common sense is sufficient without too much scientific investigation for us to know that poor mastication may well mean poor digestion, inadequate nutrition and as a result poor health and perhaps a shortened life."

With these words the General-Director of the Health League of Canada brought into focus, a few months ago, a theory which has intrigued dentists for years. The initial processes of digestion are begun in the mouth. Food, properly masticated, is better prepared for the digestive actions to follow than food inadequately readied for this biological function. These statements are factual and may be supported by scientific evidence.

An interesting consideration is posed however if one attempts to assess the possible deleterious effects of substandard dentitions or no dentitions at all upon the digestive process and the possible detrimental effects resulting from poor digestion upon nutrition and general health.

Nutrition has been defined as the sum total of those processes by which the living organism receives and utilizes the materials necessary for the maintenance of life. This includes growth, the repair of worn out structures and the liberation

of energy. The energy thus set free appears in the form of heat, mechanical work and electric currents and perhaps also in ways yet unknown.

In the mouth the food is subjected to moistening and softening by the saliva, while at the same time it undergoes maceration through the grinding action of the teeth. The food is thus rendered slightly alkaline while being reduced to the proper physical state and is then subjected to the influence of the ferment ptyalin, with the result that starch is converted into maltose. It is quite true that only a small portion of the food is acted upon in the mouth, but it would be enlightening to know what terminal results might accrue should this function of the mouth in digestion be interfered with because of inferior or absent teeth. Would the extra burden of reducing the swallowed food to proper size, which would, of necessity, have to be assumed by the stomach prove significant over an extended interval of time?

Another aspect, as well, might be a cause for serious contemplation. It is apparent that many chronic irritants are initiating factors in the development of cancerous or precancerous conditions. Dentists are assiduous in eliminating rough or sharp edges of restorations and removing areas of irritation from prosthetic appliances in order to reduce the hazard of developing oral cancers. Similarly we might wonder what fate is in store for an oesophagus, a stomach, or even a small or large intestine when improperly masticated boluses of food leave the mouth to be conveyed or acted upon by these other organs in the digestive system. Is it possible, again over an ex-

tended period, that improperly macerated food could set up such a chronically irritated area that cancer would result? Such a possibility does not seem to be a too remote consideration.

Many people, judging by the lack of concern they exhibit in respect to the maintenance of the health of their teeth, appear to attach little or no importance to their dentitions and the role the teeth play in general health. Unless appearance becomes a factor edentulous areas are of no particular concern. Many patients will neglect these spaces, even in view of repeated admonitions from their dentists, simply because the gaps "don't show".

Obviously this is a fertile area for scientific investigation. As stated so cogently by Dr. Bates in the opening paragraph it would appear to be common sense that teeth have a significant purpose in the digestive system and therefore in body nutrition. Unless and until indisputable evidence is presented to the contrary dentists would be well-advised to continue their efforts in firstly providing their patients with information and advice to assist them in preventing those disorders which may result in loss of teeth and secondly, when extractions do become necessary, encouraging the replacement of these lost structures with adequate artificial appliances.

The Library

The Library of the Association consists of practically all the books related to dentistry which have been published during the last ten years. A considerable number of volumes published earlier are also available.

The Library has been made possible through the generosity of interested members of the Association. All monies received are used for the purchase of books. The Association bears the cost of administration.

For the benefit of members and all others interested, the library is open daily from 9.00 a.m. to 5.00 p.m. except Saturdays and Sundays. All dental periodicals are available.

Books may be borrowed by the membership by writing: Librarian, Canadian Dental Association, 234 St. George St., Toronto.

Additions

ARCHER, W. H.: A manual of oral surgery. 2nd ed. 1956. 877 p. illus.

BRITISH STANDARDS INSTITUTION: Annual report 1954-55. 243 p.

CALIFORNIA UNIVERSITY: Therapy of fungus diseases, edited by Thomas H. Sternberg, and Victor D. Newcomer. 1955. 337 p. illus.

GOLDMAN, H. M.: Periodontal therapy. 1956. 565 p. illus.

LANGLEY, L. L. — CHERASKIN, E.: The physiological foundation of dental practice. 2nd ed. 1956. 587 p. illus.

LEACH, S.: History of the American Dental

Assistants' Association: ladies in attendance. 1955. 13 p.

MACDONALD, J. B.: A prospectus on dental education. 1956. 105 p. 45 tables.

MACINTOSH, R. — OSTLER, M.: Local analgesia; head and neck. 1955. 138 p. illus.

MASSACHUSETTS MEMORIAL HOSPITALS: Health for the American people. 1955. 105 p.

ROSS LABORATORIES: Growth and development of dental and skeletal tissue — clinical and biological aspects, edited by Samuel J. Fomon. 1956. 337 p. illus.

SHANE, S. M.: Anesthesia; thief of pain. 1956. 1st ed. 87 p. illus.

The Association

*Dr. Johnson of Winnipeg
Elected President*

Dr. K. M. Johnson, Winnipeg, was elected President of the Canadian Dental Association at the Annual Meeting.

Born at Strathroy, Ontario, Dr. Johnson graduated at Toronto in dentistry in 1913 and immediately took up practice in Winnipeg where he has remained since. He served with the Canadian Army Dental Corps during the first world war.

During his career he has served with distinction in many positions. He has been president of the Winnipeg Dental Society, Manitoba Dental Association and Western Canada Dental Society. He was honoured in 1951 in being made a Fellow of the International College of Dentists. In addition he has been active in church and masonic circles.

Dr. Johnson brings to the Office of President a wide and diversified experience in administration. One notable point respecting his election is that he has been a member of a partnership practice for practically his whole career. One of his partners, Dr. M. H. Garvin, was president of the Association in 1929.

Calgary Dentist Honoured

Dr. John W. Clay of Calgary had honorary membership conferred by the President of the Canadian Dental Association at the Banff meeting. In conferring the honour President McIntyre stated that unquestionably Dr. Clay was recognized as having contributed most generously to his profession throughout his whole life-time practice. Further, he said that John Clay had been a supporter of every good cause and much of the advancement in dentistry had been due to his efforts.

Dr. Clay was born at Halifax, England and came to Canada early in life. He secured his early education at Toronto. His dental education was taken at Toronto

after which he attended and graduated at the University of Pennsylvania making him a graduate of two universities. After graduation he immediately set up practice in Calgary where he has remained ever since. Amidst his activities he has been an honorary lecturer at the Dental Faculty, University of Alberta and served as a member of the staff at Holy Cross Hospital in Calgary.

Many honours have been conferred upon him during his career. He served as President of the Canadian Dental Association for two years and was President of the Western Canada Dental Society in 1953. Fellowship in the International College of Dentists was conferred upon him and he is now serving as President of the Canadian Section of that organization.

Annual Meeting Summary

—Dr. Harry Lyons, President-elect American Dental Association attended as official representative of the A.D.A.

—Dr. A. G. Racey of Montreal was elected President-elect of the Canadian Dental Association.

—some 400 dentists were registered representing all ten provinces of Canada.

—in his address to the Association, President McIntyre gave emphasis to the need for improved professional relations. (This address appears in this issue of the Journal).

—directed that effort be made in securing financial assistance for the training of dental teachers.

—progress was reported in securing additional teaching facilities.

—increased number on Executive by two members in order to take care of enlarged activities.

—established a new C.D.A. Section—Dentistry for Children.

—the War Memorial Awards were reported as follows:— 1st prize: Melvyn

Schwartzben—McGill University; 2nd prize: Sydney R. Kirson—University of Toronto.

—directed that a study be made in regard to specialization and that a policy be formulated in an effort to secure uniformity.

—statement of policy on the matter of health insurance was adopted.

—strong resolution adopted on position of dentists in hospitals with direction to forward copy to all Ministers of Health.

—adopted statement re-affirming approval of fluoridation of water supplies.

—approved Survey Report accrediting all Canadian dental schools.

—decided to publish brochure entitled "Dental Hygiene as a Career for Women".

—passed resolution requesting appointment of dental representative to be added to staff of Federal Administrator of Civil Defence.

—instituted further effort toward securing deduction of pension payments from taxable income.

—urged local dental societies to include consideration of the subject of ethics on their yearly programmes.

—adopted a statement of policy on dental public health.

—recommended the promotion of a dental health week in each province. (Details respecting these matters and many others will be published in the Transactions).

*Recognition Given
Canadian Dental Schools*

The Council on Dental Education of the American Dental Association voted unanimously to give full recognition to the five dental schools of Canada at a meeting held during the last week of May. For the first time schools of another country will be placed on the list of accredited schools issued by the A.D.A. Council. This action followed that of the C.D.A. Council on Dental Education last

April which gave its full approval to the five schools as a result of the survey work during the last six years. For several years the Canadian Dental Association has recognized fully approved dental schools in the United States. The dental schools in Canada were examined on standards similar to those used by the A.D.A. Council. Unquestionably the survey work leading up to these actions is of great significance to dental education on this continent.

Canadian Sickness Survey 1950 51

Bulletins continue to be issued based upon this survey. Bulletin No. 9, now published is entitled "Volume of Health Care for Selected Income Groups". In this regard the following information, contained in the bulletin respecting dental care is of considerable interest.

"Dental Care"

Differences in the amount of health services received by the various income groups were greatest in the case of dental care. Both the percentage of persons reporting dental care and the average number of dental visits per 1,000 persons were far lower for the low income group than for the medium income group, which in turn had figures much lower for the high income group.

Only 9.1 per cent of persons in the low income group visited a dentist during the year, as against 14.0 per cent of the medium income group and 19.3 per cent of the high income group. In all income groups dental care was received generally by a larger proportion of females than of males; the difference being especially marked in the 15-44 year range. The proportion of persons in the low income group receiving dental care was furthest behind the other income groups in respect of children under 15. Here the proportion for the low income group (6.2 per cent) was only half that of the medium income group

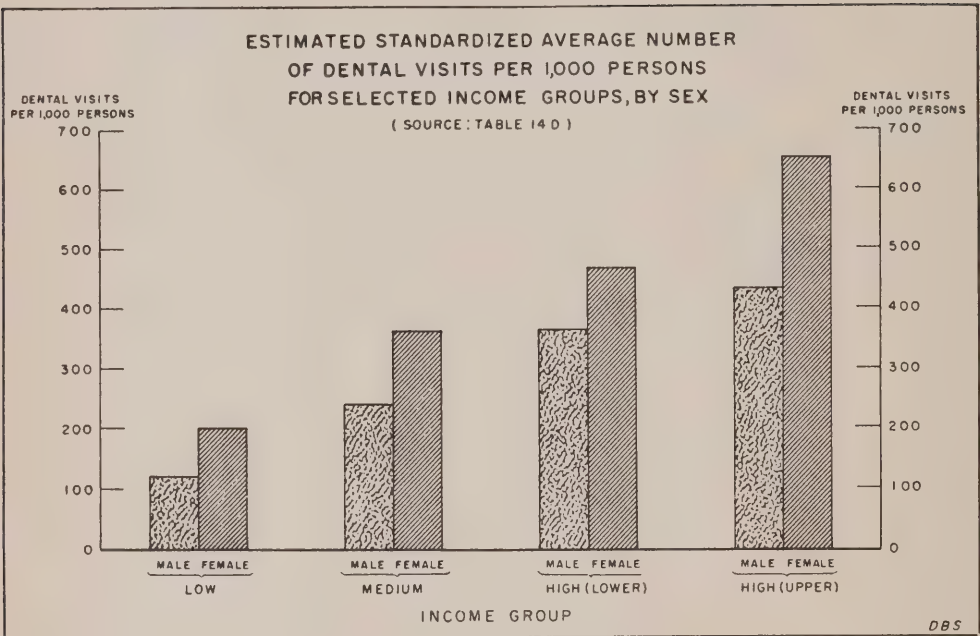


CHART 7

(12.2 per cent) and less than a third of that of the high income group (21.9 per cent). The low income group also lagged far behind in the 15-24 and 25-55 year age groups, but the difference was less pronounced for persons 45 and over. This may well be connected with the fact that for younger persons a very large share of dental treatment is normally prophylactic in nature and that many persons in the low income group would elect not to seek such treatment. The lack of preventive care at a younger age may well lead to a greater need for extraction, emergency repair, or dentures at a later age.

The average number of dental visits per 1,000 persons in the low income group was 160. This was not much more than half the number reported for the medium income group (302) and not much

more than a third of the number reported for the high income group (450). In all age groups of all income groups females reported a higher average number of dental visits than males (see Chart 7). In all age-sex groups the high income group reported a higher average of dental visits than the medium income group which in turn reported a higher average than the low income group. The difference was particularly great for children under 15 where the average numbers of dental visits per 1,000 persons for low, medium, and high income groups were 98, 238, and 447 respectively.

Amongst persons who visited a dentist during the survey year those in the low income group paid on the average 1,726 visits per 1,000 persons. This was less than equivalent averages for the medium income group (2,076) and the high income group (2,283).

Economic Security

The National Blue Cross Group For Members of The Canadian Dental Association

by E. L. R. WILLIAMSON, M.B.E., B.P.A., F.R.Econ.S., Consulting Economist.

PART II

So instead of charging \$219.17 annually, or even \$131.50 plus, this protection is provided for an annual premium of \$59.50 *including* administrative charges.

Absolutely the only way in which it is mathematically possible to provide this extensive coverage at this low premium rate, is by withdrawing from the coverage the "risks the policy-holder can afford": the deductibles felt necessary by the Blue Cross authorities were: the first \$25.00 on each hospitalization case to be borne by the Member and limitation of tonsil and adenoid cases for small children (considered a virtual certainty for every child at one time or another) to one day's benefit, although full cover is given in the event of complications or anything serious arising out of ordinary tonsil and adenoid cases.

We agree that none of us is anxious to pay out the basic deductible \$25 and that, to some of us, may be an annoyance, but each member must ask himself which he would prefer: to pay out a small amount on each case, which may be annoying but which he can afford, and to know that he has protection for many hundreds and even thousands of dollars if and when such a case or cases arise; or would he rather have a small hospital bill met to the first dollar and be left to meet \$1,000, \$1,500 or \$2,000 on a serious case?

It is this principle of "co-insurance" which makes disaster protection possible. Exactly the same principle applies in regard to fire insurance in which the individual bears a small proportion — the "co-insurance"; the insurer bears the loss which would be crippling. Again, exactly the same principle holds in regard to automobile insurance. In this field, it is now impossible to obtain "full-cover", and every member of the C.D.A. accepts \$50, \$100 or \$250 deductible as quite proper to enable him to obtain efficient automobile insurance cover. It is sound principle in fire insurance, automobile insurance, and the C.D.A. Blue Cross.

It will be of interest to all Members to know that hospitalization contracts with \$50 and \$100 deductible are now regularly issued by commercial companies in the U.S. and that the broad extension of cover which these deductibles make possible is leading those companies to do greater business in the policies with the "deductible" than their older line of "full cover".

Finally, may we point out that under the C.D.A. Blue Cross last year, the ratio of claims to premium income was 92.1%; administrative costs 5%; and 2.9% put into reserve. This means that C.D.A. members had \$108,453.00 of hospital accounts met by the C.D.A. Blue Cross contracts in the first year of operation.

The Provinces

Nova Scotia

Three prominent Halifax dentists were honored recently by the **Halifax Dental Society** at a dinner meeting held in the Nova Scotian Hotel. Dr. W. W. Woodbury, Dr. A. W. Falconer and Dr. J. S. Bagnall were presented with life memberships in the society in appreciation for their contributions to dentistry over a long period of years.

Dr. W. B. Coleman was elected president of the **Halifax County Dental Society** at its meeting at the Nova Scotian Hotel. Other officers for the coming year are: Vice-President, Dr. C. E. Dexter; Secretary-Treasurer, Dr. G. H. Faulkner; Executive member, Dr. A. S. Frank and auditors, Drs. G. K. Macintosh and H. J. MacConnachie.

Ontario

Dr. L. B. Brunton was elected president of the **Lambton County Dental Society** at the annual meeting held recently at the Sarnia Golf Club. Other 1956-57 officers are: Dr. Morris Pearlman, past-president; Dr. Norman Anderson, vice-president; Dr. William Burleigh, secretary, and Dr. W. M. McLean, treasurer.

Inaugural meeting of the **Kenora-Rainy River Dental Society** was recently held in Kenora.

Ten dentists from Fort Frances, Dryden, Sioux Lookout, and Kenora attended along with Dr. H. Bateman of Toronto, president of The Ontario Dental Association, to hear Dr. James Purves of Toronto, clinician, who lectured under the auspices of the Royal College of Dental Surgeons of Ontario and the Faculty of Dentistry of the University of Toronto.

Officers elected were: President, Dr. E. C. Apps of Kenora; Secretary-Treasurer, Dr. J. Litman of Kenora; President-Elect for 1957, Dr. G. F. Garland of Fort Frances.

Next meeting is planned for the autumn in Kenora when another clinician will speak.

Quebec

The **Dental Association of Quebec** met recently at the Chateau Frontenac.

Dentists from all over the province attended the three-day conference which was presided over by Dr. Louis Bernier of Quebec. Dr. Bernier welcomed the delegates

and expressed the hope that there would be much benefit derived from the congress, and that it would mark a new step in the dental profession.

Many table clinics were set up in the meeting hall and discussions were held concerning varied dental problems.

The clinics were replete with slides showing pictures of the problem under discussion.

In the afternoon talks were given by Dr. G. St. Marie of Connecticut and Dr. L. B. Amyot of New York.

Seven prominent French-Canadian members of the dental profession were honored recently by the **Quebec Society of Stomatology** during the second annual meeting of the **Quebec Dental Association**.

Receiving honorary certificates were:

Dr. Ernest Charron, dean of the faculty of Dental Surgery at the University of Montreal; Dr. Gerard de Montigny of the same faculty; Dr. Roland Baribeau, president of the Three Rivers Dental Society; Dr. Gustave Ratté of Quebec City, former president of the Canadian Dental Association; Dr. Emile Bourdon, secretary of the Society of Stomatology for 24 years; Dr. Emile Beaulieu, president and founder of the society; and Dr. Alexis Dery, dean of practising Quebec dental surgeons.

British Columbia

Good public relations attended the Second Annual **Dental Health Conference** sponsored May 16, 1956 by the **B.C. Dental Association** and the Division of Preventive Dentistry, Department of Health and Welfare. The Conference was particularly noted in the public press.

Thirty-four dentists and forty-two representatives of the P.T.A. in the province attended a diversified program of lectures highlighted by Dr. Harry K. Brown, Dental Consultant of the Department of National Health and Welfare, Ottawa. Dr. Brown discussed his first-hand experience with the fluoride study in Brantford, Ontario, as well as many other aspects of modern preventive dentistry.

For the dentists, there was a full presentation of diagnosis and management and of clinical paedodontic problems by Dr. David B. Law, Associate Professor and Head, Department of Paedodontics, University of Washington Dental School. Dr. Law drew upon a wealth of experience and observation for his philosophy of treatment.

Following an initial welcome by Dr. E. E. Martin, President of the B.C.D.A., and Dr. Harry Johns, representing the Council, the program got under way with an address by Dr. Stewart Murray, Vancouver's well-known Senior Medical Health Officer. Other lecturers who contributed ably during the morning were Drs. J. C. Rife, Harold Helm and C. W. B. MacPhail. As in the previous year, part of the morning and afternoon presentation was for the dentists alone.

During the afternoon, the case for good dental health was well documented for the P.T.A. representatives by Miss Rosamund Ross, Nutrition Consultant, Vancouver Metropolitan Health Department; Dr. J. C. Lewis, Chairman, Fluoridation Committee, Vancouver and District Dental Society; and a panel headed by Dr. D. J. Yeo, Director of Metropolitan Dental Services. Members of this panel on preventive dentistry were: Drs. Morton Mickelson, Arthur Fraser, D. B. McDonald and David Law.

During the period the dentists heard Dr. Law again on Paedodontics, followed by a very noteworthy lecture by Dr. J. F. McCreary, Professor of Paediatrics, University of British Columbia Medical School. This part of the program then featured table clinics by Drs. Lorin Lind, Vancouver Paedodontic Study Club; Roy Eburne and Ross Gifford, Inter-city Paedodontia Study Club; and Arthur Hayes, Orthodontist.

The conference program closed with a lecture on "The Present Status of Preventive Measures in 1956" by Dr. Harry Brown, with final remarks by Dr. Arthur Poyntz, Chairman, Dental Health Committee of the B.C. Dental Association.

The **Victoria and District Dental Society** held its regular monthly meeting on May 14 in the Empress Hotel. Present were 30 members and guests who enjoyed a cocktail party before the business was transacted. Reports of the retiring president and treasurer were presented and adopted. These officers for the coming year were elected by acclamation: President, Dr. C. B. Jameson; President-Elect, Dr. T. W. James; Secretary, Dr. T. G. Smith; Treasurer, Dr. W. A. T. Salter; Directors, Drs. W. R. Loudon, G. C. Russell and B. E. Metcalfe.

The Annual Spring Golf Tournament of the **Vancouver and District Dental Society** was held at the Vancouver Golf Club on Thursday, May 31. The weather was beautiful for golf and seventy-one teed off. Like the weather, the golf was excellent and Dr. Murray Krasnoff, with a gross of 76,

was the winner of the Leach Trophy. Runner-up was Dr. Matt Waterman, whose score of 78 made him winner of the B.C. Dental Supply Company's trophy and a replica of the same.

The low net winner, Dr. Robert Davis, with 59, caused a lot of confusion to the handicap committee; it was the lowest net in our history. Bob won the Ash Temple Trophy and a replica of it. The long drive was won by Dr. Ralph Burton who belted one 295 yards down the 17th fairway. Closest to the pin on No. 3 was Dr. Alex Dobbins, whose ball stopped 7 feet from the cup. The visitor's prize went to Jerry Splatt of the B.C. Dental Supply Company — his gross of 75 was top for the day. Other prize winners were: Drs. A. Campbell, D. B. McDonald, H. L. Purdy, T. Nikiforuk, G. D. Seale, L. H. Chapman, J. S. Craib, F. W. Banford, E. E. Martin, W. Julien and Ken Walley.

Seventy-six sat down for dinner, showing that the dinner gathering is very popular. Afterward Dr. Jack Pentland played the piano and led community singing. Dr. Bill McPhail was honored on a happy birthday. In attendance were representatives from the supply houses and the Dental Laboratory Association. The golf committee was composed of Drs. Dick Butler, A. Campbell and F. W. Banford.

D. H. M.

Alberta

Dr. Arnold H. Lane was elected president of the **Edmonton and District Dental Society**. He succeeds Dr. A. D. Fee.

Other executive members are: Dr. S. Gordon Geldart, vice-president; Dr. J. H. M. Young, secretary; Dr. R. Blackmore, treasurer; Dr. R. B. Hager, dental convenor; Dr. W. S. Murray, Dr. V. Kuzyk, and Dr. Fee, directors.

A committee was set up to publicize preventive dentistry. So far, fluoridation is one of the most effective forms of prevention of dental decay.

The society's first golf meeting will be held at Elk Island Park. Formal monthly meetings will resume in the fall.

New Brunswick

The **Saint John Dental Society** held its annual reception and buffet supper at the Admiral Beatty Hotel recently. Dr. E. D. Halford, the president, presided over the gathering which was attended by forty-six. After a most delightful supper, dancing was enjoyed by all. Dr. G. L. Ramsay, Dr. A. Steuermann and Dr. John G. Blackmer assisted with the arrangements for the enjoyable event.

The Corps

Dr. L. E. Kelly of Vernon, B.C., has been appointed to the R.C.D.C. in the rank of Captain. Captain Kelly received his B.A. from the University of British Columbia in 1950 and his D.D.S. from McGill University in 1954. He was commissioned in the Royal Canadian Air Force during the Second World War and has since been an active member of R.C.D.C. Militia Units in Quebec and British Columbia. Captain Kelly has been posted for duty in No. 11 Dental Coy., Edmonton. He is married and has four children.

Summer Camps for R.C.D.C. Militia Units in 1956 will be conducted at Wainwright,

Alberta; Niagara-on-the-Lake, Ontario; and Utopia, New Brunswick. Lt.-Col. T. L. Marsh, who recently returned from Europe where he commanded No. 1 Field Dental Unit, will attend all Camps, as representative of the Directorate of Dental Services.

Major A. T. Roger of the R.C.D.C. School attended the Quebec Provincial Dental Convention and presented a paper "Benign Oral Lesions" on June 1, 1956.

Colonel G. B. Shillington, C.O. No. 11 Coy. R.C.D.C., presented a table clinic at the C.D.A. Convention on the subject of "Partial Denture Design".

General News

An appropriation of \$6,026,000 for the **National Institute of Dental Research** for the 1957 fiscal year starting July 1 was finally approved by Congress on Wednesday, June 27. On a motion made by Rep. John E. Fogarty (D.R.I.), chairman of the Subcommittee on Health of the House Appropriations Committee, the House of Representatives by a voice vote concurred in the \$6,026,000 appropriation previously approved unanimously by the U.S. Senate. Originally, the House of Representatives had voted an appropriation of \$3,471,000 for next year's dental health activities of the U.S. Public Health Service. The \$6,026,000 figure represents the full amount requested by the A.D.A. The funds for the Dental Institute were part of the appropriation bill for the National Institutes of Health. In all, \$184,000,000 was appropriated for the seven national institutes. The bill now goes to the White House where it is expected that it will be approved by President Eisenhower despite the fact that the total amount voted is considerably higher than that originally recommended by the administration. The 1957 appropriation for dental activities is more than double the \$2,971,000 recommended for fiscal 1957 by the Bureau of the Budget and nearly three times as large as the 1956 appropriation of \$2,214,000. Practically all of the increased funds were earmarked for activities relating to dental research.

Dr. William J. Gies, whose efforts on behalf of dental education, dental research and dental publications gained him international renown, died May 20 in Lancaster, Penn. He was 84 years old. Death was attributed to a cerebral haemorrhage. Dr. and Mrs. Gies moved to Lancaster last October after making their home for 57 years in New York City. Dr. Gies was a biological chemist and served on the faculty of Columbia University from 1898 until his retirement in 1937. In 1937 Dr. Gies was honoured at Atlantic City "in token of our enduring gratitude and veneration" by nine national organizations. These included the A.D.A., the National Association of Dental Examiners, the American Association for the Advancement of Science, American Association of Dental Schools, the International Association for Dental Research, the American Association of Dental Editors, the Canadian Dental Association, Omicron Kappa Upsilon and the American College of Dentists.

Dr. Gies in 1921 began a study of dental education in the United States and Canada under the sponsorship of the Carnegie Foundation for the Advancement of Teaching. The report was published in 1926. As an adjunct of this study, Dr. Gies in 1923 initiated action that helped unite the four separate organizations of dental school faculties into one body, the present American Association of Dental Schools. He

founded the Journal of Dental Research in 1919 and served on its editorial board for many years. In 1920, he helped found the International Association for Dental Research, serving as honorary president, secretary and president. He was also editor of the Journal of the American College of Dentists. Additionally, Dr. Gies was instrumental in founding the dental section of the American Association for the Advancement of Science and served as its secretary. He also was active in the American Association of Dental Editors and was its president in 1935-36. In 1951, the William J. Gies Foundation for the Advancement of Dentistry was founded and in 1952, a portrait plaque in Dr. Gies' honor was placed at Columbia University.

Surviving, in addition to his wife, Mabel, are two sons, Robert Henry, of Studio City, California, and James Tressler, of Radnor, Penn., and a daughter, Mrs. Mary Kellogg, of Jackson, Mich.

Dr. Carl S. Sebelius has been appointed Dental Health Officer at **World Health Organization Headquarters** and began his duties in June. He follows the post first held by Dr. John W. Knutson, of the United States Public Health Service, who was on loan to W.H.O., and will continue his work in planning and developing W.H.O.'s dental health programme. Dr. Sebelius was formerly Director of the Division of Dental Health of the Tennessee Department of Public Health.

A petition by Dr. George L. Waldbott, Detroit physician and fluoridation opponent, that the **Wayne County Medical Society** (Detroit) withdraw its endorsement of fluoridation has been rejected by the society's public health committee. In recommending that the society reaffirm its favorable stand on the public health measure, the committee reported that Dr. Waldbott's testimony provided insufficient evidence to substantiate his charges.

PROGRAMME

Eastern Ontario Dental Association Convention

Sunday, Sept. 23, 1956

- 10:00 a.m. Golf—Ottawa Hunt Club
Dr. L. Barnabe, Chairman
- 8:00 p.m. Hospitality Night—
Assembly Hall, Lansdowne Park.
1. Eastman Kodak Sound Color Movie, Hawaii.
 2. Accordionists Susie and Klaus Dazell.
 3. Puppets—Mrs. Sturgeon.
 4. Refreshments.

Monday, Sept. 24, 1956

- 8:30 a.m.—10:00 a.m. Registration and Exhibits.
- 10:00 a.m.—11:30 a.m. Table Clinics.
- 11:30 a.m.—12:00 noon Exhibits.
- 12:00 noon Joint Luncheon—Speaker: Dr. C. T. Bissell, President, Carleton College.
- 2:00 p.m.—3:30 p.m. Dr. Chester Perry, Professor of Prosthetics, University of Detroit. "Consideration of Problems in Complete Denture Construction."
- 3:30 p.m.—4:30 p.m. Eastman Kodak Company
Mr. C. G. Brownell,
Oral Photography.

- 4:30 p.m.—5:30 p.m. Exhibits.

- 6:30 p.m. Buffet Dinner Dance,
Assembly Hall, Lansdowne Park.
Entertainment—Wilf Stebner Orchestra,
Dress Optional.

Tuesday, Sept. 25, 1956

- 9:00 a.m.—10:00 a.m. Business Meeting.
- 10:00 a.m.—11:30 a.m. Dr. Chester Perry
"Preparing the Patient for Artificial Dentures."
- 11:30 a.m.—12:30 p.m. Periodontics — Dr. Bruce Squires, Ottawa.
- 12:30 p.m.—2:30 p.m. Lunch where you wish.
- 2:30 p.m.—3:30 p.m. Dr. Lorne MacLachlan, Ottawa. "Dentogenics" The Creation of the Illusion of Natural Teeth in Artificial Dentures.
- 3:30 p.m.—4:30 p.m. R.C.D.C. Operative Dentistry.
- 6:30 p.m. Stag Dinner, Quebec Suite.
Speaker: Mr. Robert Japp.

In Memoriam



Howard Whittaker — Dr. Howard Whittaker of Edmonton, Alberta, passed away on June 20, 1956 at the age of 75 years.

Dr. Whittaker was born in London, Ontario. He was graduated from the Chicago College of Dental Surgery in 1904 and remained on the staff for two years as a demonstrator before commencing practice in Edmonton. He was a charter member of the Edmonton Dental Society and later became President. He was a member of the Board of Directors of the Alberta Dental Association for some 12 years and Sec.-Treas.-Registrar for 10 years, though his term in this office was interrupted by one term as Vice-President.

He was the provincial representative on the Dominion Dental Council for 12 years and served as President from 1920-22 and during these 2 years was also President of the Canadian Dental Association. He also served as representative of the Alberta Dental Association on the Senate of the University of Alberta for 6 years.

He was made a Fellow of the American College of Dentists in 1923 and was made a life member of the Edmonton Dental Society.

A sister in London, Miss E. M. Whittaker, survives.

Arthur Morley Phillips — Dr. Arthur Morley Phillips of Toronto, Ontario, passed away on April 30, 1956 at the age of 62 years.

Dr. Phillips who had practised dentistry in Toronto for many years, was born at Bond Head, attended public school in that village and high school in Bradford before going to the Royal College of Dental Surgeons of Ontario. He graduated in 1912 and began his practice in Orono and Loring, Ontario, later moving to Toronto where he continued his work until his retirement in 1954.

Surviving Dr. Phillips are his wife, the former Florence Mabel Olmstead, and two daughters, Mrs. Gilbert Dewis and Miss Doris.

James Malcolm Wilson — Dr. James Malcolm Wilson of Trenton, Ontario, passed away on May 20, 1956, at the age of 76 years.

Born in Napanee, Ontario, Dr. Wilson received his matriculation at Albert College and in 1905 graduated from the Royal College of Dental Surgeons of Ontario. With his brother, Dr. Donald D. Wilson, he began his practice in Belleville. When the First World War broke out, he joined the overseas forces where he became one of the keymen in the organization of the Dental Corps. Upon cessation, he retired with the rank of Lieutenant-Colonel.

Returning to his dental practice, he finally located in Trenton, first as a dentist for the R.C.A.F. and then as a private practitioner. In post-war years he retained an active interest in the Great War Veterans' Association, of which he became president.

Dr. Wilson was a member of King Street United Church, the Trenton Rotary Club and for years was active in Masonic work. He was a Past Master of Moira Lodge A.F. and A.M. Belleville, and a prominent Liberal who had held many important posts in the councils of the party.

Dr. Wilson is survived by his wife and a brother, Dr. Don D. Wilson of Ottawa.

Charles C. S. Fremming — Dr. Charles C. S. Fremming, of Winnipeg, Manitoba, passed away on June 20, at the age of 66.

He was born in Denmark and came to Winnipeg in 1911. He secured his L.D.S. as a Manitoba dental student in 1917.

He was appointed Danish vice-consul in 1928 and in 1947 received the Liberation medal for his services with the Danish Government.

Surviving are his wife, Mabel; three

daughters, Dr. Gerda Allison, Jean and Ellen, and six grandchildren.

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Harold Drury Morris — Dr. Harold Drury Morris of Toronto, Ontario, passed away on June 25th, 1956 at Berkeley Springs in West Virginia. He was 58 years of age.

Born in Orillia, Ontario, Dr. Morris graduated from the Royal College of Dental Surgeons of Ontario in 1923. Dr. Morris began his practice in Orillia where he remained for 14 years before returning to Toronto.

An ardent hobbyist, Dr. Morris operated a hand-printing press and also did oil painting and metal work. He was a member of the Masonic Lodge, Business Men's Club, the Y.M.C.A., the Unity Club and had been vice-president of the Debating Club. He was also a member of St. Clair United Church.

Dr. Morris was greatly interested in public affairs and served as Alderman in Orillia in 1934, Deputy Reeve in 1935, County Council Special Education Committee in 1935 and on the Hospital Board in 1935.

He leaves his wife, the former Dr. F. Marita M. Burnet, who was a member of Dr. Morris' graduating class.

•
William Sargison McKay — Dr. William Sargison McKay of Galt, Ontario, passed away on July 7, 1956, at the age of 80 years.

Born in Barrie, Ontario, Dr. McKay moved to Galt when he was 12 years old. He attended Galt Collegiate and in 1901 graduated from the Royal College of Dental Surgeons of Ontario. He then began his practice in Galt where he continued his work until his retirement in 1951.

A prominent official of the First United Church, he was a member of Galt Lodge, A.F. and A.M., and also of the I.O.O.F. Dr. McKay served for eight years on the Public School Board — two years as Chairman. He served three terms as Mayor of Galt, was Chairman of the P.U.C., served on the City Council and was an Alderman from 1943-1945. In his youth he was a member of Galt's football and baseball teams.

Dr. McKay is survived by his two daughters, Mrs. R. P. Fairclough of Toronto and Mrs. E. J. Houston of Ottawa.

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John Harrison Dickson — Dr. John Harrison Dickson, of Killarney, Manitoba, passed away on June 17, following a lengthy illness.

Dr. Dickson, son of the late Dr. John Dickson (who located in Brandon in 1886 and was one of the pioneer dentists of Manitoba), was born in Brandon on August 26, 1894.

Dr. Dickson was a graduate of the Royal College of Dental Surgeons, Toronto, Ontario, and in 1919 he located in Winnipeg, where he practised until 1930, at which time

he went to Killarney, Manitoba, where he built up a large practice. Prior to graduation he served in World War I. In addition to his ability as a dentist he was a skilled wood worker and a keen philatelist.

He is survived by his wife, Ruth; a son, Jack, Prince George, B.C.; one brother, Dr. Stanley R. Dickson, Brandon; two sisters, Mrs. Irving Cross, Hoosick Falls, N.Y.; Mrs. E. Balderschevieler, Crawford, N.Y.

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Jacques Routhier — Dr. Jacques Routhier of Montreal, Quebec, passed away on June 14, 1956 at the age of 32 years.

Dr. Routhier began his studies at the Seminar of Quebec, and then he attended the College of St. Marie, finally completing his education at the University of Montreal.

Other than his wife, the former Madeleine Trudeau, he leaves his children, Michel, Claude, François and Jacques.

•
Roy Herbert Snyder — Dr. Roy Herbert Snyder, of Winnipeg, Manitoba, passed away on June 25, 1956, at the age of 66.

He graduated from Northwestern Dental School of Chicago in 1916, and after serving overseas in the Canadian Dental Corps for several years, he located in Winnipeg in 1920, where he established a large practice.

Dr. Snyder gave his services to the Municipal Tuberculosis Hospital, where he spent a half-day of each week for years.

He was an enthusiastic curler and was a Past President and Honorary Life Member of the Manitoba Curling Association. He was also a member of the Masonic Order and had a host of friends as a result of his genial personality.

He is survived by his wife, Virginia; a son, Dale; a daughter, Mrs. J. E. Stone, and two granddaughters.

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John Lorne MacDougall — Dr. John Lorne MacDougall passed away in Ottawa, Ontario, at the age of 57 years.

Born in Tiverton, Ontario, Dr. MacDougall graduated from the Royal College of Dental Surgeons of Ontario in 1923. He practised for a few years following graduation in Western Canada. Dr. MacDougall was forced to abandon his practice because of World War I disabilities.

Dr. MacDougall was the Liberal member of Parliament for Vancouver-Burrard. His home was in Vancouver but at the time of his death he was attending Sessions in Ottawa. He was first elected to the Commons in 1949 and returned in the 1953 election. He had a booming voice which was familiar in the House and the corridors. He was fond of joshing both political colleagues and opponents.

Dr. MacDougall is survived by his wife, Marjorie.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1957	Winnipeg, Manitoba	June 23rd—26th
1958	Montreal, Quebec	Oct. 5th—8th
1959	Ottawa, Ontario	
1960	Halifax, Nova Scotia	

FUTURE EVENTS

Date	Function	Location	Officer	Address
Aug. 30-Sept. 1	Saskatchewan Dental Assoc. Convention	Waskesiu	Dr. G. H. Janzen	11 Knox Block, Prince Albert, Sask.
Sept. 7-8-9	N.O.D.A. Convention	Sault Ste. Marie, Ont.	Dr. L. B. Lukenda	2 Albert St. E., Sault Ste. Marie, Ont.
Sept. 23-25	E.O.D.A. Convention	Ottawa, Ont.	Dr. A. C. Stinson	202 Laurier Ave. Ottawa, Ont.
Oct. 17-18-19	Montreal Dental Club Annual Fall Clinic	Montreal, P.Q.	Dr. Bruce Ward	1414 Drummond St., Montreal, P.Q.
Nov. 23	Faculty Day Dental Alumni Assoc.	Toronto, Ont.	Dr. R. Moore	2 Grenview Blvd., Toronto, Ont.
Dec. 3-7	Greater New York Dental Meeting	New York, N.Y.	Dr. R. E. Morse	Room 106A, Hotel Statler, New York, N.Y.
Feb. 21, 1957	Dental Workshop Conference	Royal York Hotel, Toronto, Ont.	Dr. F. H. Compton	City Hall, Toronto, Ont.
Sept. 7-14 1957	Congrès de la Fédération Dentaire Internationale	Rome, Italy	G. H. Leatherman	Secretary, London, England

SHORT GRADUATE COURSES

Tufts School of Dental Medicine announces the following courses:

- Crown and Bridge Prosthesis for the General Practitioner.
Sept. 17-21, 1956
- Occluso-Rehabilitation I—Lecture and Seminar Course
Sept. 21-26, 1956
- Occluso-Rehabilitation II—Special Participation Course
Seven months beginning October 5, 1956.
- A Participation Course in Periodontics
Ten Mondays beginning October 8, 1956.
- Participation Course in Periodontology
October 8 through October 12, 1956.
- Minor Oral Surgery
October 17 to December 5, 1956.
- Clinical Dentistry for Children
October 19 to November 23, 1956.

For further information contact: Dr. Irving Glickman, Director, Division of Post-Graduate Studies, 136 Harrison Ave. Boston, Mass.

New York University announces the following courses:

Sept. 17/56—May 23/57	Periodontia and Oral Medicine
Sept. /56—May /58 full time	" " " "
Sept. /56—May /58-half time	" " " "
Sept. /56—May /60	" " " "

These courses are designed for comprehensive preparation in Periodontia and Oral Medicine and are of particular significance for certification towards specialization.

Feb. 27/57—May 8/57	Refresher course in Periodontia and Oral Medicine.
Apr. /57—four weeks	Periodontia and Oral Medicine in the Spanish Language.

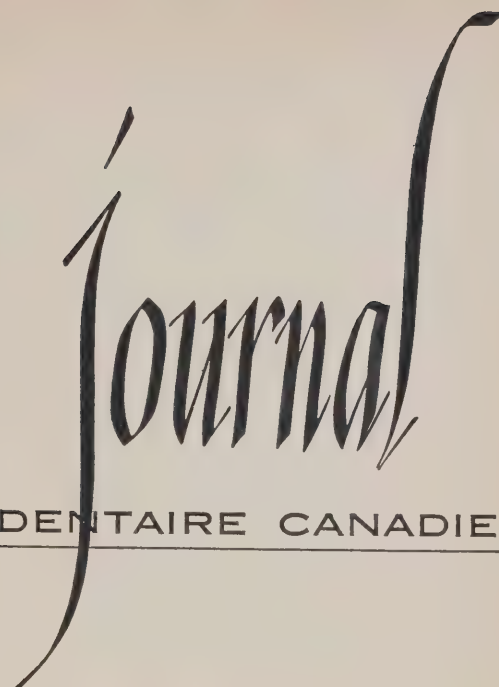
For further information: Secretary, Postgraduate Division, New York University, College of Dentistry, 209 East 23rd St., New York 10, N.Y.

Temple University School of Dentistry announces a two weeks course in Advanced Orthodontics beginning January 20, 1957. Applications can be made to: Dr. Louis Herman, Director of Postgraduate Studies, Temple University School of Dentistry, 3223 North Broad Street, Philadelphia 40, Penn.

The University of Toronto, Faculty of Dentistry announces the following courses:

Oct. 18-19, 1956	Periodontics
Nov. 5-9, 1956	Radiodontics
Dec. 3-7, 1956	Endodontics
Mar. 11-15, 1957	Orthodontics
Apr. 29-May 3, 1957	Dental Oral Surgery & Anaesthesia

For further information: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College St., Toronto 2-B, Ont.



DE L'ASSOCIATION DENTAIRE CANADIENNE

Prothèse maxillo-faciale stabilisée à l'aide d'aimants magnétiques

par JEAN NADEAU, B.A., D.D.S., Université de Montréal, Montréal, Qué.

Ce rapport de cas met en relief la correction, à l'aide d'une prothèse, d'une cavité s'étendant du palais à la face, à la suite d'une intervention chirurgicale pour un épithélioma papillaire du sinus maxillaire droit.

Histoire de cas

Mad. E.B., 55 ans, blanche, édentée complète, se présente pour faire traiter un gonflement du maxillaire droit. En 1950, la patiente a remarqué un petit nodule du volume d'un pois qui, peu à peu, a atteint la grosseur d'un pruneau, en 1951. Un an plus tard, en 1952, le palais dur s'est perforé spontanément. Diagnostic — en juin 1952, épithélioma alvéolaire de la glande salivaire; en octobre 1952, épithélioma papillaire à l'état statique du sinus du maxillaire droit.

Traitement et pronostic — Opération de Caldwell-Luke. Ablation du maxillaire droit avec éviscération de l'orbite, le 10 octobre 1952 (figures 1, 2, et 3). Radiothérapie du 13 novembre au 12 décembre

1952. La patiente fut revue à intervalles réguliers, sans présenter de récurrence jusqu'au 12 novembre 1953. En janvier 1954, on découvre de petites excroissances dans la cavité créée par la chirurgie et, le 18 février 1954, on pratique l'électrocoagulation de la cavité. Il n'y a pas d'autres récurrence et la patiente paraît en bonne santé. Tout en la tenant sous observation, on nous la réfère pour correction de la béance faciale.

Technique

On prend des empreintes préliminaires de la bouche (fig. 4) pour la confection de porte-empreintes individuels pour une prise d'empreinte aussi parfaite que possible du reste des tissus et aussi d'une partie de la cavité créée par l'intervention. Ces porte-empreintes, une fois fixés, sont utilisés pour l'enregistrement des tracés; on monte les dents pour un premier essai. On procède ensuite pour la prise d'empreinte de la cavité faciale par l'ex-

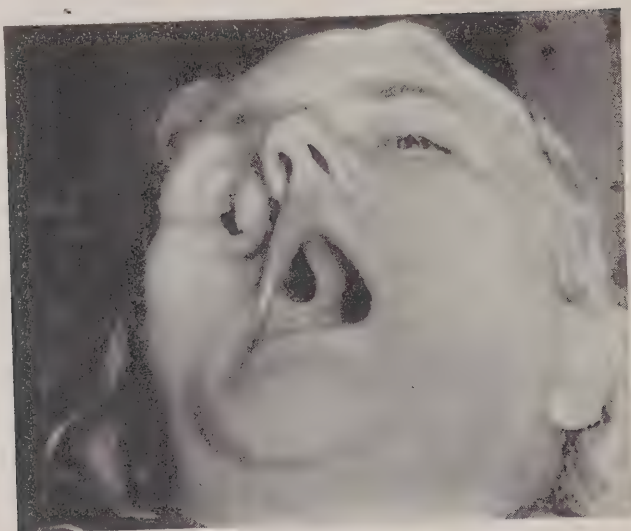


FIG. 1

Vue de la figure, après guérison. Noter la dépression de la joue et de la lèvre supérieure.

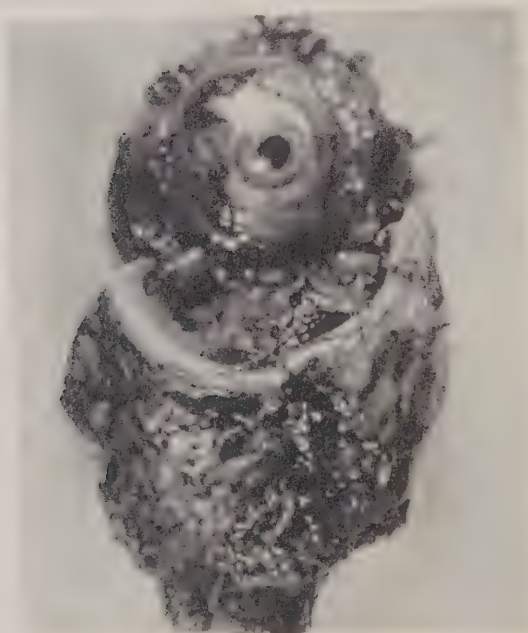


FIG. 2

La tumeur et l'oeil après son ablation.



FIG. 3

Cavité dans la figure, où on peut apercevoir la fissure sphénoïdale.

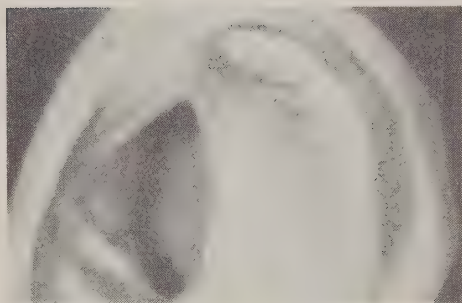


FIG. 4

Modèle coulé dans l'empreinte préliminaire montrant la perte de substance.

térieur de la bouche, quand les plaques-basès sont en place sur les crêtes.

Quand la substance à empreinte a durci, on la dégage de la plaque-base supérieure par l'extérieur de la cavité. On coule un modèle en pierre en trois sections pour faciliter la mise en moufle de l'obturbateur et son ablation après la cuisson. Une fois l'obturbateur ajusté et poli, on y perce un trou à l'intérieur du côté du palais pour y insérer un aimant. On emplit de plâtre à durcissement rapide le tiers du trou et l'obturbateur est placé dans la cavité faciale. Durant ce temps, on maintient l'aimant à l'intérieur de la bouche, en dirigeant ses deux pôles parallèlement à la surface palatine (fig. 5). On enlève l'obturbateur de la cavité et on recouvre d'une matrice de pierre les deux pôles proéminents de l'aimant. Quand la pierre a durci, on enlève le plâtre du trou et on le remplace par un mélange mou de résine auto-polymérisante. La résine ayant durci, on enlève la matrice et on finit d'emplir le reste de la cavité de l'obturbateur avec d'autre résine. On polit le tout.

L'empreinte finale de la crête inférieure est prise avec une pâte d'oxyde de zinc-eugénol en utilisant la technique fonctionnelle (bouche fermée). La prothèse inférieure est ensuite terminée.

On creuse la plaque-base supérieure sur sa face en contact avec l'obturbateur pour y faire place à un second aimant. On emploie une pâte à base d'oxyde de zinc-eugénol pour l'empreinte finale de tous les tissus de support et du plâtre pour l'empreinte de la région de l'aimant. On finit le dentier supérieur muni de son aimant.

On façonne en cire sur un moulage obtenu d'une empreinte de la face le modèle de la prothèse faciale et on y place un oeil artificiel en plastique avant l'essayage. On termine alors la partie faciale de la prothèse (fig. 9).

Avant de donner congé à la patiente, on ajoute en position horizontale deux autres aimants à la partie supérieure de l'obturbateur. Les pôles d'un aimant font face à la partie externe de la prothèse faciale, les pôles de l'autre à la surface interne. Ainsi, les trois parties supérieures se maintiennent à l'aide de quatre aimants (fig. 8, 6).

Résumé

Les aimants se sont avérés d'un grand secours pour la rétention et la stabilité d'une prothèse faciale accolée à une prothèse buccale. On peut juger du résultat final de la pièce de prothèse en obtenant ces différents facteurs: (a) restauration de la mastication, de la déglutition, de la phonation et de l'esthétique, (b) amélio-



FIG. 5

A—L'obturateur à demi retiré du modèle à section.

B—L'obturateur en place dans l'empreinte finale supérieure.

C—La prothèse trouée pour recevoir l'aimant qui sera attiré à celui déjà en place dans l'obturateur.

D—L'obturateur replacé sur le modèle.

E—L'aimant retenu en place sur l'obturateur pour déterminer sa position sur la prothèse dentaire; il est retenu dans le dentier à l'aide de plâtre; la résine auto polymérisante est substituée au plâtre.

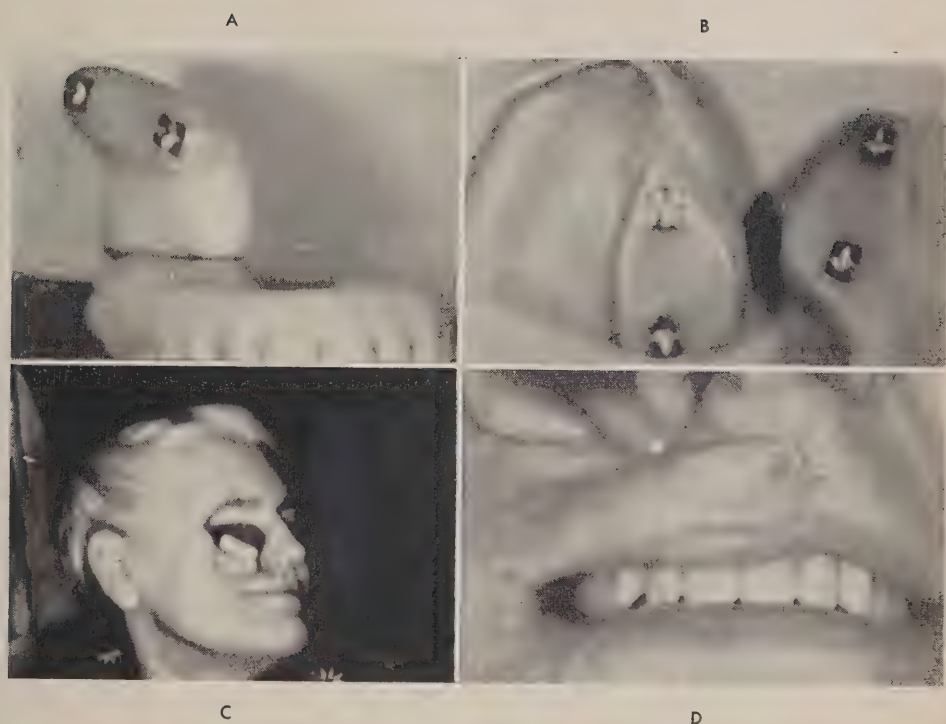


FIG. 6

A et B—Prothèse dentaire et obturateur. C et D—Insertion des prothèses dentaires et de l'obturateur.

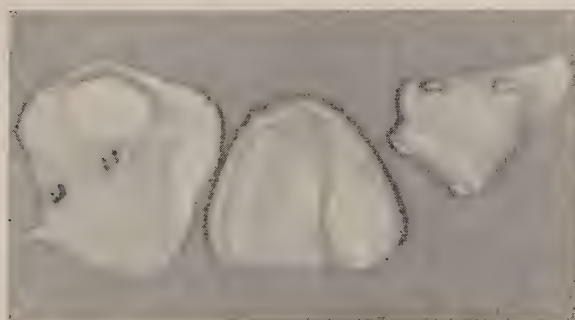


FIG. 7

Les trois parties de la restauration. Noter la place qu'occupent les quatre aimants magnétiques.



FIG. 8

La prothèse dentaire, l'obturateur et la prothèse faciale réunis et maintenus ensemble par les aimants.

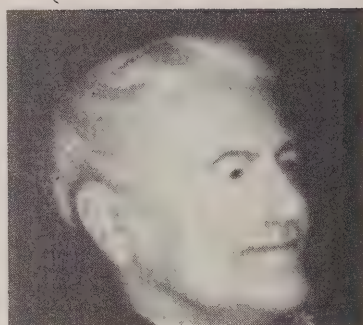


FIG. 9

La restauration complétée.

ration du psychisme et regain de confiance.

Pour être fonctionnelle, une prothèse maxillo-faciale doit être simple et le patient doit la manipuler facilement. Les aimants, en stabilisant les pièces, les rendent simples et efficaces. Aussi, le patient

recouvre son bien-être d'une façon sûre.
**10515, rue Chambord,
Montréal 12, Qué.**

Nous remercions, pour les photographies, le docteur Jean Fontaine de la Faculté de chirurgie dentaire de l'Université de Montréal et le Service de Photographie de l'Hôpital Notre Dame.

Une super-dent artificielle

Un dentiste astucieux — c'est une revue médicale anglaise qui nous l'apprend — a inventé une super-dent artificielle capable de venir à bout des viandes les plus dures.

Désormais, déclare-t-il, les porteurs de dentiers seront avantagés par rapport aux gens qui ont toutes leurs dents. Grâce à mon invention, ils réduiront aisément en bouillie des biftecks qui tiendraient en échec un lion en pleine forme.

Cette dent révolutionnaire s'inspire du principe de la machine à fabriquer la chair à saucisses; sa partie supérieure est percée de trous: lorsqu'on ferme la mâchoire la nourriture est obligée de passer par ces orifices et elle sort de l'autre côté littéralement hachée.

Manifestations à distance des infections gingivo-dentaires

par M. DECHAUME.

Les infections gingivo-dentaires provoquent des accidents de tous ordres:

Les-uns *locaux*: stomatites, cellulites ou phlegmons péri-maxillaires, ostéites, sinusites maxillaires, plus rarement adénites et adéno-phlegmons.

D'autres *régionaux*, par voie réflexe: névralgies.

Enfin, des *accidents à distance*. Parmi ces derniers, ne seront pas retenus les accidents de dentition observés chez les enfants lors de l'évolution des dents: ils constituent un chapitre très spécial de la pathologie dentaire.

Ce problème des manifestations à distance des infections gingivo-dentaires a suscité des discussions qui ne sont pas encore closes. Il est donc important de chercher la cause de ces divergences de vues et de se faire une opinion.

Il faut reconnaître en premier lieu que nous, spécialistes, avons une grande part de responsabilité. Beaucoup d'entre nous ne croient pas à la réalité de ces faits et découragent par des réponses trop facilement négatives les médecins qui nous interrogent sur la possibilité de l'étiologie dentaire de certaines maladies. Il y a à cela une excuse: LA RECHERCHE DES INFECTIONS GINGIVO-DENTAIRES EST DELICATE.

Cliniquement, et ceci mérite d'être souligné, il s'agit le plus souvent d'*infections chroniques à symptomatologie très atténuée*: gingivales, dentaires ou péri-dentaires.

L'*infection gingivale*, rarement en cause, est constituée par des culs-de-sacs pyorrhéiques sur quelques dents, ou par le capuchon muqueux d'une dent de sagesse inférieure. La muqueuse n'est pas toujours rouge, mais la pression, à peine douloureuse, fait sourdre une goutte de pus.

Plus habituellement, c'est une *dent dépulpée* dont l'infection peut ne se traduire par aucun phénomène douloureux subjectif. Elle porte une obturation, mais n'est pas douloureuse à la percussion. Un seul signe a une valeur certaine par sa constance: cette dent est un peu plus mobile que les autres. Il y a même des dents qui se mortifient sans avoir présenté de carie. On peut objecter que la dent mortifiée depuis des années n'a jamais donné d'accidents; mais cet équilibre peut s'être trouvé rompu et, d'autre part, l'organisme s'être sensibilisé progressivement.

La radiographie doit être systématiquement pratiquée et surtout "correctement" interprétée. Il n'est pas besoin, pour penser à une infection dentaire, d'observer à l'apex un granulome; un simple élargissement du ligament, même avec un canal obturé, une cémentite raréfiante (apex sucé) ou hypertrophiante (racine en baguette de tambour), l'absence d'obturation d'un canal suffit à étayer l'hypothèse, sinon à affirmer la certitude d'une infection, car les microbes ne sont pas visibles sur une radiographie.

La méconnaissance de ces notions fondamentales fait éliminer à tort l'étiologie dentaire de certaines maladies.

Une deuxième raison pour laquelle on hésite à affirmer une relation de cause à effet entre une maladie et une infection dentaire tient à la *multiplicité des pathogénies* qui peuvent intervenir.

I.—LE ROLE DE LA PYOPHAGIE a été défendu surtout par Lebedinsky. Pour cet auteur, ce qui compte c'est la déglutition du pus, qu'il soit d'origine buccale, nasale ou respiratoire. Une fois dans la cavité gastrique, les globules du pus sont rapidement détruits et les microbes phagocytés (intracellulaires) mis hors d'état de nuire. Seuls les microbes

*Conférence donnée à la faculté de Médecine de l'Université de Montréal, le 22 mars 1956.

extracellulaires restent pathogènes. La sécrétion acide de l'estomac ne supprime pas toute vie bactérienne; il y a des bactéries saprophytes qui aident la digestion. Les bactéries pathogènes sont à l'origine de la formation d'acide lactique et d'acide butyrique, ce qui rend le contenu gastrique hyperacide. D'où évacuation accélérée d'aliments n'ayant pas subi complètement la digestion gastrique. L'alcalinité intestinale étant insuffisante pour neutraliser l'acidité du contenu gastrique évacué trop tôt, le pylore s'ouvrira et se fermera spasmodiquement. Bientôt le contenu intestinal deviendra hyperacide, d'où impossibilité de l'action digestive intestinale (qui s'opère normalement en milieu alcalin).

D'autre part, si la muqueuse est normalement un organe de protection contre les germes pathogènes, la moindre lésion crée une porte d'entrée à l'infection.

Ainsi les microbes pathogènes peuvent: *cultiver dans la cavité digestive et les parois du tube digestif*. L'infection est d'abord cavitaire puis pariétale: gastrite, entérite, appendicite, colite. Elle peut: *remonter vers le pancréas*, le foie, les voies biliaires: cholécystite, angiocholite.

Passer dans la circulation générale. Les microbes absorbés par le système veineux des portes capillaires vont: soit s'arrêter dans le foie: hépatite; soit, après avoir franchi ce barrage, passer dans la circulation générale, puis s'arrêter dans les reins (phlegmon périnéphrétique, pyélonéphrite), ou donner divers syndromes: buccoartculaire, vasculaire, cutané, nerveux, respiratoire, ou provoquer une septicémie.

Etre éliminés après résorption de leurs toxines, non sans avoir donné un syndrome d'intoxication chronique.

II.—*LA SEPTICEMIE* est exceptionnelle, bien que les bactériémies soient fréquentes.

III.—*LA THEORIE DES INFECTIONS FOCALES* est la plus classique (Fr. Billings, Rosenow, Teller), mais ne correspond qu'à un petit nombre de cas cli-

niques. Les foyers infectieux (granulomes ou pyorrhée) déversent leurs produits septiques dans la circulation générale, en quantité minime mais de façon continue et prolongée, créant un état septicémique latent qui se trahit un jour par "des manifestations infectieuses secondaires localisées à un organe distant du foyer primitif" (rhumatismales, rénales, cardiovasculaires, cutanées). Pour les Américains (Rosenow), l'agent microbien responsable est le *streptococcus viridans* non hémolytique. Pour Grandclaude et Lesbre, ce serait le *strepto-entérocoque*.

IV.—*LA THEORIE LES REACTIONS SECONDES OU DES MICROBES DE SORTIE* a été défendue avec autorité par Rouslacroix. Cette théorie relève de quatre faits expérimentaux: phénomène de Koch, réaction à la tuberculine, expérience de Sanarelli, phénomène de Schwarzmann, qu'il est intéressant de rappeler.

1°—*Le phénomène de KOCH*—Un cobaye neuf et bien portant inoculé sous la peau avec une émulsion de B de Koch au point habituel, face interne d'une cuisse, présente au bout d'une quarantaine de jours un ganglion, dans l'aîne correspondante (accompagné d'un ulcère au lieu de l'inoculation dans 50% des cas); puis se prennent les ganglions mésentériques, la rate, les ganglions péri-bronchiques, les poumons, le foie et l'animal succombe à cette infection chronique généralisée en 2 ou 3 mois.

Si, durant l'évolution de cette maladie relativement longue, est injectée sous la peau une nouvelle dose de bacilles de Koch, les phénomènes observés sont tout différents: il se forme en 6 à 8 jours un abcès aigü qui, ouvert spontanément, évacue au dehors la presque totalité des germes injectés dans cette seconde épreuve.

D'où la déduction: un animal, en cours d'infection par un germe déterminé et présentant certains symptômes, réagit d'une façon différente et présente des symptômes différents, si on introduit

dans son organisme une nouvelle quantité des mêmes agents microbiens.

2°—*La réaction à la tuberculine.* — Si nous injectons maintenant au cobaye, non plus le B. de Koch mais, l'un des poisons secrétés par lui dans les cultures, la tuberculine, nous observons qu'un animal neuf supporte sans dommage une quantité très forte de tuberculine; qu'une dose infiniment plus faible de ce poison injectée à un animal déjà tuberculisé provoque:

a) une papule rouge et indurée au point d'inoculation;

b) de la fièvre;

c) une hypertrophie et congestion des ganglions et tous organes atteints par la tuberculose, parfois suivies de tuberculose généralisée.

Les deux faits que nous venons de décrire, qui montrent les réactions modifiées d'un animal tuberculisé à toute pénétration nouvelle du B. de Koch ou de ses sécrétions, ont été groupés par Von Pirquet sous la dénomination de phénomènes allergiques ou plus simplement d'allergie. Cette allergie peut entraîner le réveil d'une tuberculose latente.

3°—*L'expérience de Sanarelli.* — Elle aboutit à des résultats analogues, mais avec des germes différents et un autre tableau clinique. Un lapin reçoit dans les veines une dose minime de vibrions cholériques vivants; aucun symptôme morbide ne se déclare, étant donnée la faible quantité; l'infection reste latente. Cependant, à quelques jours de là une seconde injection d'une dose très minime suscite immédiatement une diarrhée hémorragique mortelle, riche en vibrions. Le même phénomène se produit si l'injection seconde est faite avec une culture filtrée, c'est-à-dire ne contenant plus de corps microbiens vivants, mais uniquement leurs sécrétions ou toxines.

Déductions: chez un animal en état d'infection latente, une réinfection, même minime, avec le germe pathogène ou la pénétration dans l'économie de ses toxines, réveille les germes latents, exacerbe leur virulence et suscite des symptômes morbides.

4°—Enfin, le phénomène de *Schwarzmann*, le dernier de la série: Injectons au lapin dans les veines, ou même sous la peau, une dose minimale de vibrions cholériques; aucune manifestation. Deux ou trois jours après, nouvelle injection dans les veines, non plus de vibrions mais de certains microbes intestinaux B. Coli, B. Protéus ou simplement le filtrat de leurs cultures: très rapidement survient au point d'inoculation cutanée un ulcère nécrotique accompagné d'une réaction intestinale violente, parfois mortelle. Chose curieuse et capitale, ces deux ordres de lésions renferment des vibrions cholériques vivants.

De ces faits Rouslacroix dégage les conclusions suivantes: "Les réactions secondes ne présentent pas un caractère strictement spécifique, elles peuvent être provoquées par un germe (ou ses toxines) différent de celui qui a été injecté en premier lieu. Mais toujours les accidents morbides qui se déclarent sont dus *aux germes de l'infection première*. Donc chez un animal ou chez l'homme en *état d'infection latente ou inapparente*, certaines réinfections, mêmes, légères, dues à des microbes banaux, réveillent la virulence des agents microbiens de ladite infection latente, *les font sortir de leur foyer* et leur redonnent le pouvoir pathogène. Suivant la pittoresque expression de M. Nicolle, les germes réactivés sont *des microbes de sortie*. Et nous comprenons maintenant comment, sous l'une des nombreuses influences morbides, des contaminations inévitables auxquelles nous expose la vie journalière, le *strepto-entérocoque* sortira du foyer granulomateux dentaire pour envahir le sang, se localiser sur les articulations ou infecter un organe: coeur, poumons, reins, cerveau . . . *Infections focales, allergie, microbes de sortie*, tels sont les termes de ces états infectieux d'étiologie, jusqu'à ce jour mystérieuse, *cryptogénétique*, pour employer un mot barbare mais scientifiquement approprié."

Pour Bircher, l'allergie de l'infection dentaire focale s'ajoute à l'allergie tuber-

culinique de base et aggrave les phénomènes pathologiques préexistants.

V.—*THEORIE TOXINIENNE* (allergie (1), anaphylaxie) (Klinger et Rosle, Berger, Ravaut, Birkel). Les décharges septiques des foyers d'infection apicale (exotoxines), les protéines hétérogènes mises en liberté par la désintégration des micro-organismes (endotoxines) et des cellules tissulaires du foyer microbien primitif sont susceptibles de déterminer une rupture de l'équilibre humoral.

Manifestations hyperergiques, dit Birkel, dues à la sensibilisation élective de certains organes. En effet, les produits précités sont doués de toutes les propriétés qui caractérisent les antigènes donc capables de stimuler la formation d'anticorps qui, en se combinant à eux au niveau de certains organes, plus spécialement au niveau des vaisseaux capillaires, y détermineraient l'éclosion de réactions inflammatoires et dégénératives caractéristiques des infections focales. La ressemblance est frappante entre les manifestations histologiques de ces infections focales et les réactions hyperergiques que l'on peut déterminer à volonté chez les animaux sensibilisés. D'autre part, plusieurs de ces manifestations se retrouvent dans le tableau classique de l'allergie humaine: altérations articulaires (arthrites sériques, idiosyncrasiques, tuberculiniques), atteintes rénales (néphrite anaphylactique), lésions des nerfs, des muscles, des vaisseaux, du cœur . . .

Etat anaphylactique, disent d'autres auteurs. Ainsi Ravaut, comme conclusion à une magnifique observation de parakératose eczémateuse guérie sans traitement local, après ablation de foyers infectieux dentaires a écrit: "Nous insistons sur ce fait que, chez des sujets porteurs d'un foyer d'infection ou d'une cause d'intoxication chronique, la sensibilisation se fait lentement, insidieusement, reste

latente jusqu'au jour où un incident banal le révèle brusquement sous forme d'une manifestation seconde. Elle éclate à la suite d'ingestion d'aliments, de fraises, par exemple; à la suite d'absorption de médicaments, de contact avec les substances irritantes, parfois même sous l'influence du grattage et des frottements. Ces états de sensibilisation présentent des degrés d'intensité variable. La cause provocatrice peut, chez un sujet normal ou peu sensibilisé, ne déterminer aucun accident, ou une légère réaction passagère; chez un sujet fortement sensibilisé, elle est déchainante et devient tout à coup le point de départ de troubles divers plus ou moins durables et récidivants selon les phases de l'état de sensibilisation."

VI.—Enfin, il existe une *théorie nerveuse*.

D'après Ricker, toute la physiopathologie est conditionnée par l'attitude du système nerveux à l'égard des irritations endogènes et exogènes; c'est le système nerveux qui modifie la circulation dans les vaisseaux terminaux et qui provoque les réactions tissulaires et les processus dystrophiques qui constituent la manifestation locale des maladies. Ainsi la pathologie est dominée par le système nerveux, les maladies ne sont pas des processus locaux et cellulaires, comme l'enseigne la médecine classique. L'inflammation n'est pas une réaction locale plasmocytocytocyttaire d'ordre bactérien ou toxique, mais la manifestation de perturbations circulatoires d'ordre nerveux.

Ces données s'appuient sur diverses expériences: Kartachov, sur des jeunes chiens, a trépané des molaires. Après arrêt de l'hémorragie pulpaire, il a placé au contact de cette pulpe un morceau d'ouate imbibé de formol à 5 p. 100 ou de toxine diphtérique. La cavité dentaire a été close avec un ciment. Des chiens témoins ont reçu dans les mêmes dents de l'ouate mouillée avec du sérum physiologique.

L'auteur a fait l'évacuation de 2 cc. de liquide céphalorachidien chez ces chiens. Au cours des 4 à 5 jours suivants

(1) Le nom d'allergie s'applique au phénomène général dont l'anaphylaxie est un cas particulier (Deerr).

aucune altération, sauf un amaigrissement.

Le 6ème jour, il a noté de l'apathie, puis des convulsions cloniques de la tête et des extrémités, le coma et la mort.

L'autopsie a montré de l'hyperémie avec quelques épanchements sanguins sur l'appareil gastro-intestinal. Les chiens témoins sont demeurés indemnes.

Ces expériences soulignent particulièrement le rôle d'une irritation des branches périphériques du trijumeau (pulpe dentaire spécialement), irritation chronique par le formol ou toxique par des toxines. Cette irritation provoque une modification du système nerveux en général, qui crée un état de prédisposition de l'économie vis-à-vis d'irritants de toutes sortes, les troubles se développant plus aisément chez les jeunes animaux.

Speransky, toujours sur des animaux, en imbibant d'huile de croton les 2ème et 3ème branches du trijumeau, fait apparaître de l'herpès labial, des abcès de la langue, de la conjonctivite, de l'otite moyenne; ce sont là des phénomènes dystrophiques dans le territoire du nerf irrité; en séparant les 2ème et 3ème branches du trijumeau et imbibant le bout central, Speransky obtient de l'œdème du visage, de conjonctivite, de l'inflammation des lèvres et de la langue, même sur l'autre moitié du visage. Ces phénomènes imitent l'allergie et montrent qu'à partir de n'importe quel point du système nerveux central on peut provoquer des modifications inflammatoires de la bouche.

4 à 8 semaines après l'imbibition avec l'huile de croton du bout central, Speransky constate que les manifestations précitées disparaissent et font place à une paradentose et une explosion de caries dentaires, ce qui, pour lui, signifie que la résistance nerveuse s'est paralysée et que les saprophytes de la bouche sont devenus pathogènes.

D'autres expériences de Speransky éclairent le problème de l'infection focale.

Par voie opératoire, chez le chien, il dépose à la base du cerveau, au niveau du tuber cinereum un petit pois ou un

fragment de verre. Il constate d'abord des crampes musculaires, puis des phénomènes buccaux: hémorragies des gencives, rétraction des gencives, dénudation des alvéoles, puis des érosions profondes des joues, et encore des complications lointaines; au niveau des poumons, de l'estomac, de l'intestin (hémorragies, ulcères . . .) qui ne peuvent s'expliquer que par une transmission nerveuse.

Toujours Speransky, dans une dent saine d'un chien, introduit un coton avec du formol et de l'huile de croton, ou une pâte arsenicale il obtient les mêmes lésions sur les poumons, l'estomac, l'intestin. Ce n'est plus par irritation de l'organe central nerveux que ces phénomènes s'expliquent, il y a une curieuse ressemblance avec la "focal infection". Même lorsque les substances imprégnant le coton sont très diluées, les réactions sont si violentes que le chien finit par mourir. Les accidents se produisent aussi lorsque les dents soumises à ces traitements sont extraites avant le déclenchement des réactions focales. Ses données expérimentales rappellent l'impossibilité d'inhiber la marche du rhumatisme malgré la suppression des foyers infectieux dentaires amygdaliens . . . Heureusement, d'autres expériences de Speransky et Wischnersky permettent de nouveaux espoirs: ces auteurs, par des injections intramédullaires de novocaïne ont traité avec succès des ulcères de l'estomac, de l'intestin, des pyorrhées alvéolaires, du scorbut, du noma . . .

Enfin, selon Ricker et Speransky, une pulpe non infectée mais soumise à des excitations nerveuses (obturation métallique trop profonde, abrasion . . .) peut devenir, par l'intermédiaire du système nerveux central, un foyer d'où partent des réactions à distance.

De cette théorie on peut rapprocher celle de *Graves* et *Slauck*: les toxines issues des foyers primitifs suivraient le trajet des gaines lymphatiques périneurales et remonteraient vers les centres nerveux pour se fixer, de façon élective, sur les cellules des cornes antérieures de la moëlle et des centres moteurs du cer-

veau. L'atteinte irritative des cornes antérieures se traduirait cliniquement par des symptômes de fibrillation musculaire particulièrement nets au niveau des membres inférieurs (ce serait pour Slauck le symptôme primordial des infections focales).

Il faut également rappeler ici les travaux de *Reilly et son école* sur le rôle du système neuro-végétatif au cours des infections locales dans la pathogénie de certaines lésions parenchymateuses. Cet auteur a pu reproduire expérimentalement, non seulement les lésions intestinales de la typhoïde par irritation du nerf splanchnique mais aussi une glomérulonéphrite par simple irritation chronique d'un territoire quelconque du système neuro-végétatif, ce qui tend à démontrer que l'irritation, la sensibilisation du système autonome est capable en dehors de toute action déclenchante, de déterminer des troubles durables au niveau de groupes de tissus déterminés.

Reilly et Laplane écrivent même: "Au cours d'infections intéressant un territoire cutané ou muqueux particulièrement riche en terminaisons sensitives, l'excitation de celles-ci met en jeu des réflexes capables de modifier le fonctionnement des appareils vasomoteurs dans des organes éloignés. Un exemple est fourni par les angines et leur répercussion sur le régime circulatoire des reins, avec tout ce qu'elle comporte de conséquences".

Ainsi peut-on observer un syndrome neuro-végétatif central (fièvre d'origine dentaire) et un syndrome neuro-végétatif périphérique albuminuries, rhumatismes ...).

* * *

Chacune de ces théories a été reconnue valable au cours d'observations cliniques indiscutables. Comment, dans ces conditions ne pas comprendre qu'un médecin ou un chirurgien-dentiste puisse être dérouté? Trop longtemps a prévalu cette opinion simpliste que, pour affirmer l'étiologie dentaire, il fallait identifier le même microbe dans le foyer dentaire, dans le sang et dans la lésion à distance. Il faut faire définitivement justice de ces conceptions

sommaires qui ont encore cours aujourd'hui. De même, il faut savoir interpréter le résultat de l'intervention thérapeutique: la suppression du foyer d'infection dentaire ne suffit pas toujours à assurer la guérison, la maladie seconde peut, après avoir été libérée de l'influence du foyer primitif, suivre une évolution autonome.

* * *

Ces manifestations cliniques à distance des infections gingivo-dentaires sont multiples.

Les septicémies aiguës sont classiques mais exceptionnelles.

De même *les septicémies chroniques*, parmi lesquelles les fièvres d'origine dentaire. J'en ai observé récemment un cas dans lequel la pathogénie nerveuse pouvait seule être retenue: il ne s'agissait pas d'une septicémie.

Autres manifestations cliniques

Il peut exister, à côté de ces septicémies, diverses maladies pour lesquelles la relation de cause à effet avec les infections dentaires n'est pas facile à établir. Elles peuvent frapper tous les appareils:

1° *Appareil locomoteur*: Lésions articulaires et musculaires, rhumatismes.

Les arthrites et les myosites ont été signalées, mais elles demeurent exceptionnelles.

Les rhumatismes, accidents articulaires, congestifs et mobiles (M. P. Weil) sont plus fréquents. Ils s'expliquent par sensibilisation protéinique, par allergie, par la théorie nerveuse, aussi leur preuve est difficile à donner.

2° *Appareil circulatoire*:

- a) Des infections dentaires peuvent être responsables d'endocardites d'Osler;
- b) On peut observer de même des anémies et même des leucémies.

3° *Appareil urinaire*:

Il peut exister des néphrites consécutives à des infections bucco-dentaires, de même qu'à des infections amygdaliennes ou naso-pharyngiennes. Rosenow et Meis-

ser ont attribué la lithiase rénale à des infections apicales.

4° Appareil digestif:

La gastrite septique décrite par de nombreux auteurs ne s'explique pas uniquement par une mastication défectueuse. Il faut en outre, soit la pyrophagie, soit une auto-intoxication consécutive à l'absorption des produits putrides ingérés ou de leurs sécrétions par voie sanguine.

Barbier et Seguin ont observé des ulcères gastriques aigus après des périodes de soins dentaires importants.

On a signalé des entérites, appendicites, colites, troubles pancréatiques, cholécystites, angiocholites.

5° Appareil respiratoire:

Les abcès du poulmon peuvent se voir après des infections bucco-dentaires.

6° Système nerveux:

J'ai eu l'occasion d'observer une névralgie du plexus brachial qui a guéri après des extractions dentaires. D'après Gibier-Rambaud la plupart des psychoses fonctionnelles et la demence précoce pourraient être en rapport avec des infections dentaires.

7° Appareil oculaire:

Il entre en rapport avec le système gingivo-dentaire par des connexions artérielles, veineuses et nerveuses.

D'autre part, les racines dentaires plongent dans le sinus maxillaire qui forme le plancher de l'orbite.

On peut voir: des troubles nerveux: névralgies, blépharospasmes, paralysies; du larmolement; des conjonctivites, des hémorragies sous-conjonctivales; des kérato-conjonctivites; des iritis et irido-choroidites; des névrites optiques; des phlegmons de l'orbite.

Ces troubles s'expliquent: rarement par thrombose ou transmission par voie artérielle; parfois par l'intermédiaire d'une infection sinusienne; plus souvent par allergie.

Mais les troubles trophiques réflexes

s'associent souvent à ces pathogénies.

8° *Glandes endocrines*: Fréquence des infections dentaires ou rhino-pharyngiennes dans l'observation des troubles thyroïdiens ou parathyroïdiens.

9° *Affections cutanées*: On a décrit des dermatoses par voie réflexe: pelade, canitie, herpès, zona, lichen-plan.

Les dermatoses en rapport de contiguïté ou de proximité avec des infections gingivo-dentaires: lèvres (sycosia, impetigo).

Des dermatoses en rapport avec des foyers infectieux gingivo-dentaires par l'intermédiaire de la voie sanguine: allergie?

10° *Infections d'origine bucco-dentaires au cours de la puerpéralité*.

Elles peuvent être dues: soit à une infection par voie sanguine.

On a signalé: des infections graves du sein; des vomissements; des anémies, des pyélonéphrites; des avortements, des décollements du placenta; des infections graves dans les suites de couches.

* * *

La conclusion à tirer de ces faits s'impose: les foyers d'infection gingivo-dentaires peuvent être à l'origine des affections les plus diverses.

En présence d'une maladie dont la cause n'apparaît pas évidente, il faut songer à l'étiologie dentaire, la rechercher ou la faire rechercher soigneusement, puis, demander sa suppression.

Malgré cette intervention, la maladie peut continuer à évoluer pour son propre compte, mais la médication générale jusque-là inefficace retrouve souvent son action.

Aussi faut-il surtout retenir de cette connaissance des manifestations à distance des infections bucco-dentaires, la possibilité pour nous, spécialistes, d'en assurer la prophylaxie ou d'éviter le développement de ces foyers par l'emploi de techniques dentaires plus biologiques.

Nouvelles de l'Association

Le docteur Johnson, de Winnipeg, élu président

Le docteur K. M. Johnson, de Winnipeg, a été élu président de l'Association dentaire canadienne, au cours de l'assemblée annuelle.

Natif de Strathroy, Ontario, le docteur Johnson a terminé ses études dentaires à Toronto en 1913 pour ensuite s'installer à Winnipeg, où il exerce depuis ce temps. Il fit du service militaire avec le Corps Dentaire de l'Armée Canadienne au cours de la première grande guerre.

Durant sa carrière, il a rempli différents postes avec honneur. Il a été président de la Société dentaire de Winnipeg, de l'Association dentaire du Manitoba et de la Société dentaire de l'ouest du Canada. En 1951, le Collège International des Dentistes lui faisait l'honneur de le recevoir en qualité d'un de ses membres. Il a aussi exercé son activité dans des organisations religieuses et maçonniques.

Le docteur Johnson accède à la présidence avec une grande expérience d'administrateur dans plusieurs domaines. Fait à signaler, il a presque toujours exercé sa profession sur une base de société avec d'autres dentistes; l'un de ses associés, le docteur M. H. Garvin fut aussi président de l'Association en 1929.

Faits à noter de la réunion annuelle

—Le docteur Harry Lyons, président-élu de l'Association dentaire américaine, était le représentant officiel de cet organisme.

—Le docteur A. G. Racey, de Montréal, a été nommé président-élu de l'Association dentaire canadienne.

—Quelques 400 dentistes, venant de toutes les provinces, assistaient au congrès. Presque tous les dentistes étaient accompagnés de leurs épouses.

—Dans son discours annuel à l'Association, le président, le docteur McIntyre, mit l'accent sur la nécessité d'améliorer les relations professionnelles et de trouver les fonds nécessaires pour former des professeurs à l'intention des facultés dentaires.

—On a rapporté que la situation s'améliorait dans le domaine des disponibilités pour l'enseignement dentaire.

—On a augmenté de deux le nombre des membres de l'Exécutif pour parer au surcroît de travail de celui-ci.

—On a mis sur pied une nouvelle section, celle de la dentisterie pour enfants.

—Les gagnants de concours du Mémorial de Guerre furent: lière place: Melvyn

Schwartzben, Université McGill; 2ième place: Sydney R. Kirson, Université de Toronto.

—On a demandé qu'on étudie à fond la question de la spécialisation et qu'on élabore une politique pour créer plus d'uniformité.

—On a approuvé une déclaration officielle au sujet de l'assurance-santé.

—On a adopté une résolution radicale au sujet de la situation des dentistes qui font du service dans les hôpitaux. Une copie de cette résolution doit être envoyée à tous les Ministres de la Santé des provinces.

—On a endossé une déclaration réaffirmant l'approbation de la fluoruration de l'eau de consommation.

—On a approuvé le rapport de la Commission d'Enquête accréditant toutes les facultés dentaires canadiennes.

—On a décidé de publier un pamphlet intitulé "L'Hygiène dentaire, carrière ouverte aux jeunes filles".

—On a passé une résolution demandant la nomination d'un représentant de la profession dentaire au sein du personnel de l'Administrateur fédéral de la Défense Civile.

—On a prié l'Exécutif de tenter de nouveaux efforts pour rendre déductibles de l'impôt sur le revenu les sommes versées à un fonds de pension.

—On a prié les sociétés dentaires locales d'inclure dans leurs programmes annuels la question d'étiquette professionnelle.

—On a approuvé une politique au sujet de l'hygiène dentaire publique.

—On a recommandé l'organisation dans chaque province d'une semaine de santé dentaire.

(Ces détails touchant ces activités paraîtront dans les Délibérations de l'A.D.C. pour 1956.)

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Crise à l'horizon

Jusqu'à ces derniers temps, le dentiste, comme son confrère le médecin, pouvait, sans aucune difficulté, servir le public dans un hôpital, en se limitant à son domaine et en observant les règlements et les traditions de l'institution.

Le dentiste apportait aussi sa collaboration à un organisme institué pour le traitement intégral des malades et consacrait souvent gracieusement son temps à soigner des indigents. D'ailleurs, son cours d'études de plus en plus orienté vers les sciences médicales et la reconnaissance officielle de ses services dans le domaine de la santé publique lui confèrent automatiquement un droit de cité dans un hôpital, où sont groupés tous les spécialistes de disciplines différentes pour le plus grand bien de l'hospitalisé.

Donc, en pratique, la coutume voulait qu'un dentiste faisant partie du personnel médical d'un hôpital, fasse hospitaliser son patient, lui prodigue les traitements requis, prescrive pour lui les médicaments appropriés et lui donne son congé, sans avoir recours à l'assistance de son confrère, le médecin. En pratique, aussi, le dentiste, plus souvent qu'autrement, appelait un médecin en consultation auprès de son malade—comme le fait le chirurgien ou le spécialiste—dès qu'un problème d'ordre médical se présentait. Cette procédure, qui nous semble tout à fait dans l'ordre, existe depuis que la profession dentaire a atteint sa maturité et a donné satisfaction à tous les intéressés, malades, administrateurs d'hôpitaux, personnel auxiliaires et médical. Or, on veut instaurer un ordre nouveau! "On" signifie certains organismes composés de médecins, qui désirent priver le dentiste de ses privilèges hospitaliers et lui enlever les prérogatives que lui ont conférées les traditions, sa formation professionnelle et l'intérêt et le bien-être des malades.

Pour ce faire, ces comités de médecins s'appuient sur les textes de loi provinciales régissant les procédures hospitalières. Ces lois, dit-on, ne renferment pas le terme "dentiste", quand elles règlementent les relations entre patients et thérapeutes: donc, le dentiste n'est pas autorisé à traiter des malades dans un hôpital.

D'après ces lois, le dentiste ne pourrait rien entreprendre sans l'autorisation d'un médecin. Ce qui veut dire en fait qu'un dentiste ne pourrait prescrire un comprimé d'aspirine pour un patient, sans que le dernier des internes médicaux appose sa griffe. Il y a là un conflit entre différentes lois provinciales, puisqu'une (la loi dentaire) permet au dentiste d'effectuer tous les traitements qu'il juge appropriés, *dans son cabinet*, et une autre (la loi des hôpitaux) empêche le dentiste de donner ces mêmes traitements *dans un hôpital*. Il y a là une contradiction flagrante que l'Association dentaire canadienne essaiera de faire corriger dans les prochains mois.

Ce problème a fait l'objet de sérieuses discussions au cours de la réunion annuelle du Bureau des Gouverneurs, à Banff, en mai dernier et la résolution suivante a été adoptée et envoyée à tous les Ministères provinciaux de la Santé:

Attendu que la santé dentaire fait partie intégrale d'un service de santé et que les dentistes ont durant de nombreuses années fait bénéficier le public de leur temps et de leurs sciences;

Attendu que la chirurgie dentaire est reconnue par les universités comme une profession de santé et que la loi dentaire de chaque province confère aux membres de cette profession certains droits et certains privilèges pour exercer leur art;

Attendu que certaines lois provinciales régissant les procédures hospitalières ne mentionnent pas un mot au sujet des dentistes, qui pratiquent dans les hôpitaux;

Il est résolu de demander respectueusement aux Ministres provinciaux de la Santé, si tel est le cas dans leur province, de prendre le plus tôt possible les dispositions nécessaires

pour corriger cet état de choses, en amendant, si nécessaire, la loi des procédures hospitalières de façon à ce que celle-ci:

1) Permette aux autorités hospitalières d'appointer sur son personnel des dentistes dûment licenciés d'après la loi dentaire;

2) Permette à un membre du personnel dentaire d'admettre un patient au dispensaire de l'hôpital, quand il juge que les traitements qu'il a à lui donner seront mieux administrés et avec plus de sécurité, s'ils le sont à l'hôpital;

3) Permette à un membre du personnel dentaire d'admettre ou de donner son congé à un patient hospitalisé, en collaboration avec un médecin.

4) Permettre à un médecin en charge d'un patient de demander à un dentiste de donner à son malade les traitements dentaires dont celui-ci peut avoir besoin;

5) Autorise un dentiste, qui a fait entrer un patient à l'hôpital selon les items 2 ou 3, ou qui est prié, selon l'item 4, de traiter le patient, à prodiguer ses traitements à l'hôpital;

6) Confère au dentiste, selon ses qualifications et dans le domaine qui lui est propre, les mêmes droits que possède le médecin dans l'hôpital;

7) Soumette le dentiste aux mêmes obligations au sujet de ses relations avec les patients, de la procédure hospitalière et des dossiers, auxquelles le médecin est soumis, selon les prescriptions de la loi hospitalière provinciale.

Comme on le voit, l'A.D.C. demande pour les dentistes à l'hôpital les mêmes privilèges qu'y possèdent les médecins, en soulignant toutefois qu'il y a du bien-être du malade qu'il soit examiné à son entrée et à sa sortie par un médecin.

Cette demande nous paraît raisonnable parce que le fait était pratiqué depuis toujours dans nos hôpitaux, parce que le curriculum des études dentaires renferme les sciences fondamentales de la médecine et des stages dans les hôpitaux, parce que la profession dentaire est reconnue officiellement comme faisant partie des services de santé. Tout le monde s'en portait bien jusqu'à ce que la Commission conjointe d'Accréditation des Hôpitaux et quelques juristes découvrent que la loi ne mentionne pas le terme "dentiste".

Nous espérons que la situation se corrigera sous peu.

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The relation of nutrition to the morphology and size of rat molar teeth

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INTRODUCTION

The phenomenal caries susceptibility of the pitted or fissured surfaces of human teeth has been the object of sporadic attention since it was discussed by Hyatt (1928, 1930), and by Bodecker (1929, 1930), who advocated the measure of placing restorations in all such "defects" immediately the teeth erupt. This "prophylactic odontotomy" was never widely accepted because of the clinically obvious fact that a fair number of fissured surfaces did not decay even after many years of oral exposure. In an attempt to pre-determine the susceptible fissures Bossert (1933, 1937) demonstrated a higher caries attack for human molar teeth in

which the sides of the fissures were steep. Brucker, in 1944, reported that the presence of a carious fissure was not a general indication of higher caries susceptibility on other surfaces of the same tooth. However, significant but low order correlation ($r=.2$ to $.6$), have been subsequently determined between the numbers of smooth and pitted surfaces decayed per individual child, and between occlusal and mesial surfaces of first permanent molars (Grainger, 1951). This need only be interpreted as meaning that the presence of caries on the fissured and on the smooth surfaces is partly due to some common mechanism, e.g. carbohydrate breakdown.

Reid and Grainger (1955), in a statistical study of the susceptibility of the various surfaces of the teeth, confirmed that although a major proportion of specific

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pitted surfaces tended to decay very soon after eruption, the remainder (varying with each surface) tended to resist caries attack indefinitely. The significant resistance to decay exhibited for specific pitted tooth surfaces by part of the population (who may or may not have caries in the rest of the mouth) has been attributed to some real difference either in the gross morphology, the microscopic morphology, or in the physico-chemical structure of the fissured surfaces. This tendency for percentages of fissured tooth surfaces decayed to stabilize after reaching a maximum had been referred to previously in a general way by Hradecky (1952). More recently, Barr (1956) has reported a similar lack of increase in interproximal caries after about the age of 21 years, although buccal gingival caries was still on the increase. Recent figures from the British Columbia Dental Health Index Survey for 1956, based on the examination of 3,500 children, suggest that the increase in percentages of carious mesial surfaces of the lower first permanent molars also follows an S-shaped curve levelling off at around 70 per cent for the age of 15 years.

The pattern of caries susceptibility of the mouth is very closely related to the degree of confinement of the surfaces, i.e. the ability to retain a plaque or the lack of access to saliva (Reid and Grainger, 1955). Setting aside temporarily the variations which no doubt exist between children in tooth quality and in overall oral environment, it was decided to investigate factors which might influence the morphology of the teeth themselves, and in particular their pitted surfaces, where caries attack accounts for roughly 75 per cent of the tooth decay in elementary school children. Thus it was hoped to establish whether the favourable morphology of certain teeth was entirely dictated by some uncontrollable genetic mechanism or whether it was due to a more optimal environment (e.g. through nutrition) during the time these teeth were developing.

It has been accepted that the morphological pattern of teeth is genetically determined (Goldberg, 1930; Gabriel, 1948, 1950; Dahlberg, 1949; Walker, 1951; Shaw, 1952). However, it is also considered that the genetic constitution of the individual determines the upper limit of growth of his parts, i.e. the maximum growth which may be obtained under ideal conditions of environment. Factors which upset the ideal conditions produce a situation where maximum growth is not attained. Such factors, if sufficiently severe, and if active during the life-cycle of the ameloblast cells, would have their influence reflected as gross abnormalities such as hypoplasia. Agents such as irradiation (Kaplan, 1953), high fever (Kreshover, 1953) and alloxan (Kreshover, Clough and Bear, 1953), may arrest the activity of the cells which form the enamel and hence produce macroscopic abnormalities. Among nutritional factors, an acute deficiency of Vitamin A, because of its specificity for ectodermal-derived tissues, produces the most obvious surface defects in teeth (Grieves, 1923; Mellanby, M., 1930; Mellanby, H., 1939, 1941; Dinnerman, 1951; Irving et al, 1952). A relationship has also been observed between enamel hypoplasia and a deficiency of Vitamin D (Irving, 1952), of Vitamin C, and of calcium and phosphorus (Sheldon, Bibby and Bales, 1945). These imperfections in enamel are gross pathological defects clearly recognizable macroscopically on the surface of the teeth.

There is also some indication that changes from the ideal environment may produce more subtle and less easily recognized alterations from the genetic pattern of teeth. Grandison, Stott and Cruickshank (1942) relate the presence of pits and fissures in the teeth of a group of children to the fact that these children were born of tuberculous parents. Cox and Levin (1944) found a difference in the fusion of the cusps of the molar teeth of two groups of rats fed different diets and stated that the difference was not related to the calcium, phosphorus or hali-but liver oil content of the diet. The same

authors found that pits occurred more frequently in the occlusal surface of the second deciduous molars than they did on the first molars and they suggested that comparably better nutrition during the formative period of the first molars results in fewer pits appearing in the teeth.

The purpose of the present studies was to examine the nature of changes which might be produced in the macroscopic morphology of teeth by the type of dietary variations which commonly exist among the population of civilized countries. Because Vitamin A has such a specific effect on ameloblasts, whose activity ultimately determines the exterior shape of the teeth, it was decided to begin the series of experiments by reducing the amount of Vitamin A in the diet of pregnant rats and observing the effects on the teeth of the offspring. Subsequently, work was undertaken with water fluoride, and with calcium-phosphorus disbalance and their interactions. The results of the entire group of experiments are reported on at this time.

METHOD

Four-month old virgin Carworth strain female rats were assigned at random to one of the following dietary groups, A, B, C, D, E, and F, and each group was fed ad libitum (Table II). Group A received a complete synthetic diet including 20 i.u. of Vitamin A per rat daily. The composition of this diet is presented in Table I. Group B received a diet of laboratory chow, for which the approximate analysis is also given in Table I. Group C received the same synthetic diet as group A, but for three months prior to mating the Vitamin A was completely omitted from the food to deplete the animals' liver reserve of the vitamin, after which 10-15 i.u. per day per rat was given just prior to mating and continuing through pregnancy and lactation. Group D received the synthetic diet as given to Group A, plus 12 ppm. of sodium fluoride in the drinking water. Groups E and F animals received the same basic synthetic diet as

those of Group A, with the addition of sufficient phosphate to change the normal 1 to 1 Ca/P ratio to 1 to 3, thus effecting a simulated Vitamin D deficiency in these rats (McCoy, 1949). Group E received the high phosphorus diet for a period dating from 3 weeks prior to mating onward, and Group F received it for 10 weeks prior to mating and until the experiment terminated.

The females were mated to normally fed males of the same strain and the litters were reduced to not more than 8 animals per litter. Five of the complete synthetic diet litters (Group A) were further reduced to two animals, the largest and healthiest-looking animals being retained in all cases.

Each litter was weighed daily and the mean weight per litter was recorded. The young were sacrificed at 22 days of age and the jaws, right tibia and knee joint were fixed in 10% formalin. One half of the mandible and the tibia of specimens from each group were decalcified, paraffin embedded, sectioned, and stained with hematoxylin and eosin for histologic study.

The upper right first molar of each specimen was dissected out, mounted on a stiff wire to facilitate handling, and photographed from the buccal, lingual and occlusal aspects, using a Graphlex camera fitted with a 3.5 micro-tessar lens and a 3+ adapter lens. Orientation was standardized and the lighting source and bellows length remained fixed for all photographs, while focusing was done by advancing or withdrawing the whole camera on a slide mount (Figure 1). Enlargements were made from each of the photographs with a pre-set enlarger; final magnification from tooth to print was approximately 26.5 times (see Figure 2).

The final photographic enlargements were measured by a technical assistant without knowledge of the identity of the specimens. The measurements taken are shown schematically in Figure 3 and consist of the following: The greatest mesiodistal diameter of the crown, the mesio-

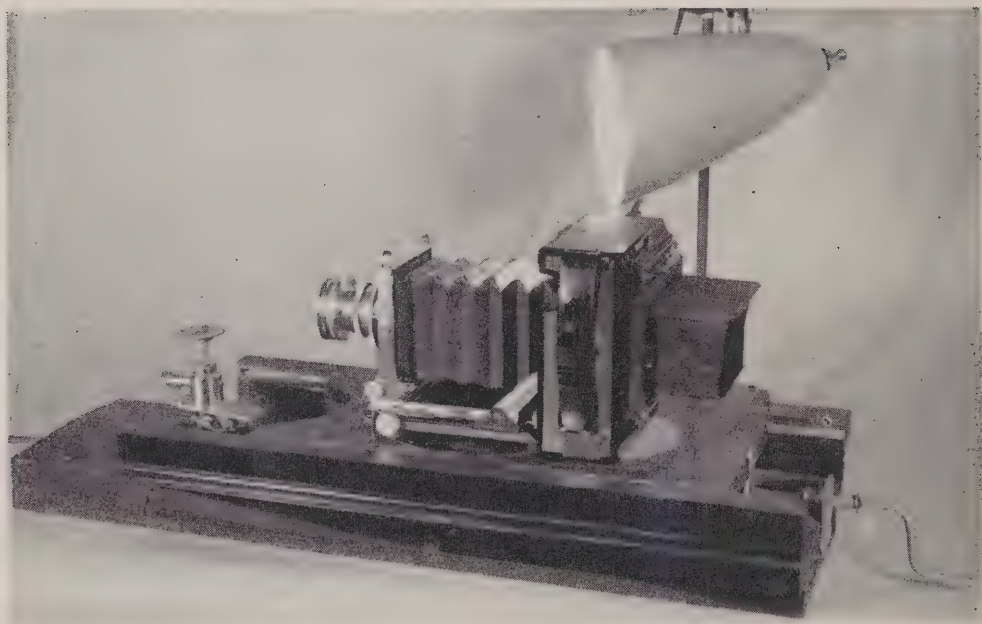
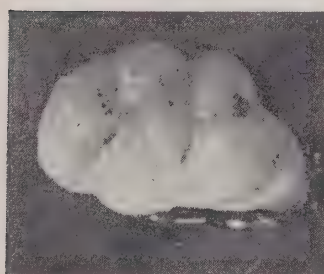
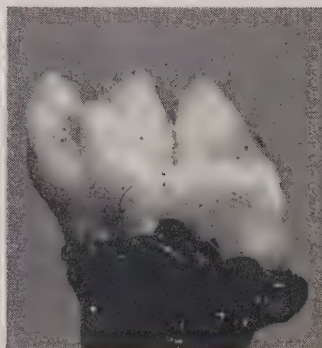


FIGURE 1.

Photographic apparatus used in examining the rat upper first molar. The teeth were fastened on a stiff wire on the universal joint and the image was focused by moving the whole camera on the sliding mount while the bellows length remained fixed.



Occlusal Aspect



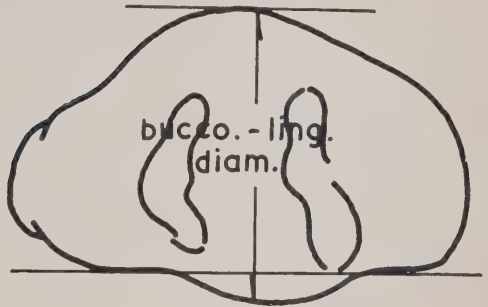
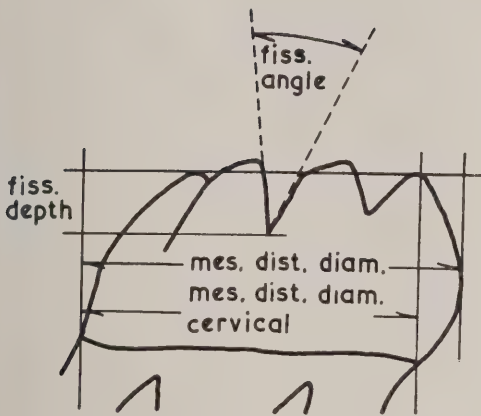
Buccal Aspect



Lingual Aspect

FIGURE 2.

Example of final enlarged silhouette of a rat upper first maxillary molar from which measurements were taken.



RAT MOLAR MEASUREMENTS

FIGURE 3.

Measurements taken from photographs, as in Figure 2.

distal diameter at the cervix, and the projection of the former over the latter, all measured parallel to a base line through the tips of the most mesial and distal cusps; the bucco-lingual diameter measured from the maximum curvature on the lingual surface at a right angle to a line maximally contacting the buccal surface; the angle between the sides of the mesial of the two fissures observed from the lingual aspect; the depth of this fissure from its apex to the base line, and an estimate of the shape of the apex of the same fissure, whether it appeared rounded, medium or sharp.

An exploratory factorial experiment was also set up to test the interactions of fluoride in the water, and a calcium/phosphorus disbalance, and a Vitamin A deficiency. Because a considerable portion of the litters were lost due to pulmonary infection, the results of this latter experiment were not entirely satisfactory statistically. However, they are reported below because they tend to corroborate the first experiment and suggest a valuable plan for further investigation. In this experiment different photographic apparatus was used in order to obtain the enlargements in one step and the observations were made on the mandibular molars. The standardization of equipment

and the hidden identity of specimens were maintained as described in the initial experiment. The overall magnification using the latter equipment was in the order of 10 times, hence values are not comparable directly with the first experiment.

For the first experiment duplicate processing was carried out for 10 specimens to ascertain the reproducibility of the measurement technique. The average differences in the first and second determinations, with their standard errors, were $+0.85 \pm 0.76$, -0.25 ± 0.88 , -0.30 ± 0.47 , $+0.95 \pm 2.68$, and $+0.55 \pm 1.01$ for the mesio-distal crown, the mesio-distal cervical and the bucco-lingual dimensions, the angle of the fissure and the depth of the fissure respectively. It was considered that these differences were small enough not to seriously limit the efficiency of the experiment and that any further elimination of Type II errors would have to be brought about by increased sample sizes.

FINDINGS

General

The daily weight records of the litters are shown for the four groups of the initial experiment in Figure 4. It may be observed that: (a) females on the Vita-

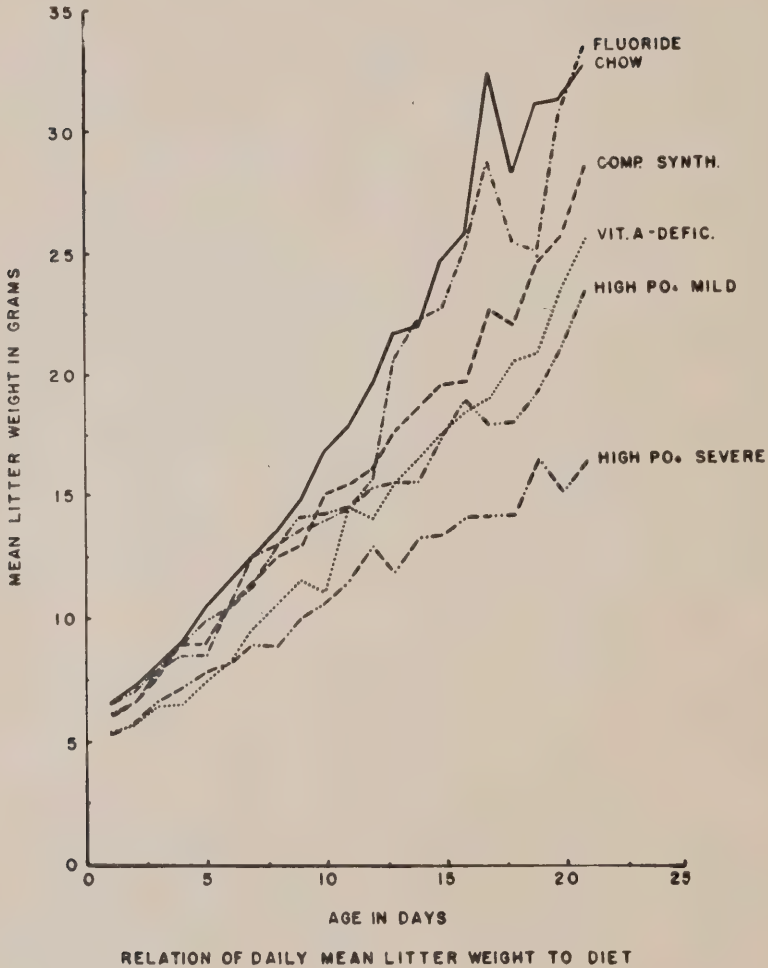


FIGURE 4.

Relation of daily mean litter weights to diet.

min A-deficient diet (Group C) and on the two high phosphate diets (Groups E and F) bore lighter litters than either the control groups (A and B) or the group on fluoridated water (D); (b) after ten days the litters of females on the chow diet (Group B) and on the complete synthetic diet plus fluoridated water (Group D) appeared to gain weight more rapidly

than those of the synthetic diet and tap water (Group A); (c) the litters of the females on the Vitamin A-deficient diet (Group C) and on the prolonged high phosphorus diet (Group F) gained weight very slowly and at the time of sacrifice the latter weighed little more than half as much as the controls.

In general, the effort to find differences

between the groups histologically was unproductive. Of the six specimens examined from the Vitamin A-deficient diet group, only one*, a female, showed changes in the tooth sections which could be interpreted as the result of a Vitamin A deficiency. In this specimen sections of the developing third molar demonstrated degenerative changes in the ameloblast cells and lack of enamel matrix formation which is typical of avitaminosis A (Melanby, 1939). Enamel maturation was also retarded in the second molar which had erupted and been in occlusion before the enamel at the base of the fissure was fully matured (food debris was observed resting on the immature enamel). Normally in rats the enamel is fully matured prior to eruption except for traces near the cemento-enamel junction.

Thus it was concluded that although there was metabolic stress produced in the Vitamin A-deficient animals as exhibited by the significant general retardation of growth, this deficiency was not great enough to produce marked tissue changes, or surface deformities observable in the photographs, and could be considered comparable to a sub-clinical human deficiency.

In the group on the prolonged high phosphate diet (Group F), while the teeth appeared to be normal histologically, there were changes in the epiphyseal disc indicative of a Vitamin D deficiency. The animals in this group were smaller in size (see Figure 4) and while the absolute thickness of the disc was quite comparable to that in animals on the complete synthetic diet, its relative thickness when compared to its width was considerably increased. (The proportion of thickness to width in the control was approximately 1 to 5, and in the high phosphate group was 1 to 3. In addition, the bony trabeculae on the diaphyseal side of the epiphyseal plate were shorter and thicker than

normal and the rows of chondrocytes in the zone of proliferation in the disc had lost some of their typical linear orientation. All of these phenomena may be associated with a Vitamin D deficiency (Weinmann & Sicher, 1955). Otherwise, sections of teeth and tibia were free of signs of deficiency and were quite comparable to the sections from the specimens on the complete synthetic and the chow diets.

The tissues of the animals on the fluoridated water appeared in every way to be normal and were, if anything, more similar to the animals raised on the chow than on the complete synthetic diet.

Tooth Size and Shape

The 51 young rats raised on the complete synthetic diet (Group A) were studied first in terms of the various criteria measured, in order to ascertain the most valid method for comparison with the other groups. Because of the recognized genetic influence on tooth morphology it was clear that possible differences between dietary groups had to be shown to be significantly greater than those differences which could occur between litters within groups. The latter was considered to represent the congenital variation (genetic, plus undetermined intrauterine environment) which in turn was to be tested against the variation between individual rats within litters. No evidence was found of differences in the offspring according to sex, or to the size of the litters, when tested against "within litters" variation, hence these factors were ignored in the detailed analysis below.

The complete results of the main experiment are summarized in Table II.

Differences between litters within groups, i.e. litters treated the same (genetic or congenital variation), were significant at the 1% level for the greatest mesio-distal diameter, the mesio-distal diameter at the cervix, the projection or overhang of the greatest mesio-distal diameter over the cervical measurement,

*This animal belonged to a litter of even smaller weight than average for Vitamin A-deficient animals, and it is thought that this litter for some reason suffered from the deficiency more than did the others.

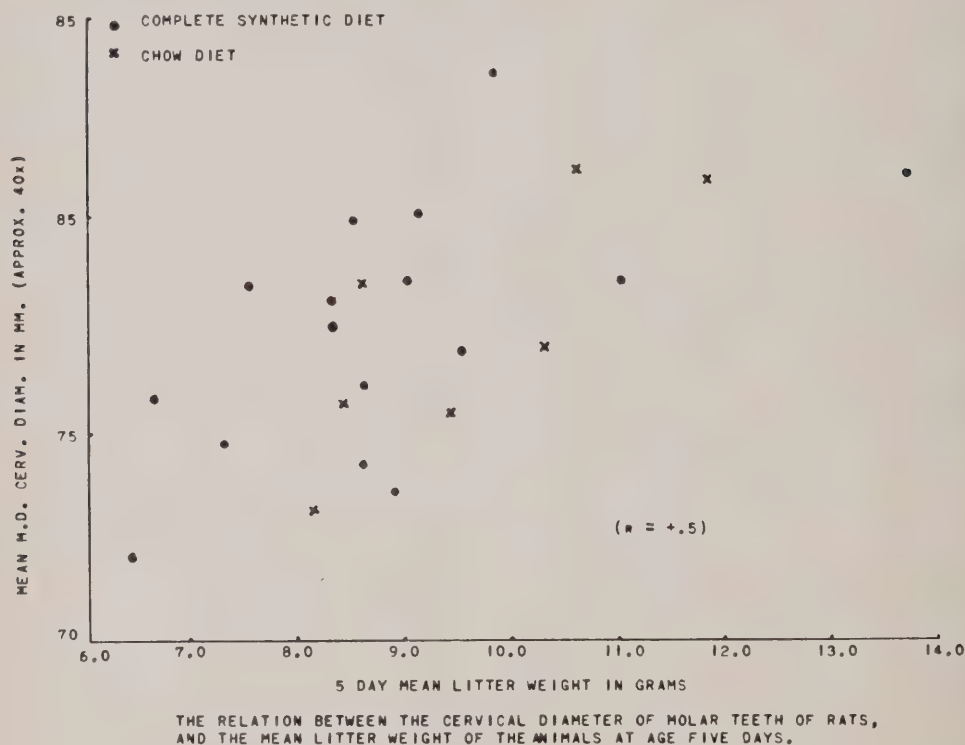


FIGURE 5.

Relation between mesio distal diameter at the cervix of the 22 day old rat's maxillary first molar teeth and the average weight of litters at five days.

for the bucco-lingual diameter, and for the angle of the sides of the fissure; and differences were significant at the 5% level for the depth of the fissure. Differences between litters on different diets, i.e. differences between groups, tested in terms of the variation between litters within groups, were found to be significant at the 1% level for all of the measurements made (Figure 4) except the overhang or projection of the maximum mesio-distal diameter over the mesio-distal diameter at the cervix, which was not found to be significantly different. By inspection of the tabulated means it can be seen that the variation for the mesio-

distal and bucco-lingual dimensions occurs mainly between the two control groups (A and B) and the experimental groups (C, D, E and F). For the angle and depth of the fissure the difference is clearly due to the prolonged high phosphorus diet.

The percentages of rounded fissure bases were found to be significantly lower ($P < .01$) for the two groups on the high phosphorus diets.

When the differences between the mean litter weights at 5 days were tested between litters in different groups in terms of the variation between litters within groups, it was found that these differ-

ences were significant at the 1% level. The cervical dimensions of the teeth were found to be closely correlated to the mean litter weights at five days (Figure 5) and when this factor was introduced as a covariant some interesting differences were found in the tooth dimensions relative to body weight. The probability for the differences between diets remained at the 1% level in terms of the five day weight adjustment, but the decrease in tooth size attributed to the Vitamin A deficiency was explainable in terms of the general body size reduction reported in Figure 4. The differences due to fluoride and to the high phosphorus diets were not proportional to decreases in body weight.

The results of the factorial experiment are given in Table III.

No statistical analysis was carried through for the results of the factorial experiment other than to summarize and array mean tooth size scores* for each cell, because the death of eleven litters left only four cells which contained estimates based on more than single litters. In the presence of apparently strong interactions and with the knowledge from the previous experiment that effects must be shown to be greater than would occur between litters treated the same, the conclusions must await repetition of the experiment. Nevertheless, inspection of Table III provides some corroboration of the first experiment and suggests additional effects. It may be seen that when fluoride was not present the Vitamin A-deficient, and the high phosphorus litters had smaller teeth, as was reported previously for Groups C, E and F, Table II. In addition, there is a suggestion that the double stress produced even smaller teeth than either of the single deficiencies.

When fluoride was present and Vitamin A and Ca/P were normal the tooth size was smaller than when fluoride was not present, confirming the observations of

Groups D and A in the first experiment. For the fluoride-present group the animals with the double stress had very small teeth and for the single deficiencies the teeth were larger. This latter result, if true, suggests that the effect of a single deficiency is different according to the presence or absence of fluoride.

DISCUSSION

It seems clear that the size of rats' teeth may be influenced rather easily by nutritional conditions at the time of the tooth formation and that the untoward dietary conditions which affect the teeth need not be strong enough to produce gross general disability.

It would appear that teeth can be reduced in size proportionally with the animal body as a whole (viz. the Vitamin A group), which might be termed a non specific metabolic stress as far as the teeth are concerned. Specific size reduction of teeth seems to be produced by the fluorides on the face of apparent increase in body weight. The calcium/phosphorus stress (Vitamin D deficiency) seems to illustrate a combination of the above whereby a general body size reduction accompanies a proportionally even greater tooth size reduction.

The macroscopic morphology of the teeth seems only to have been influenced by the prolonged calcium/phosphorus stress (Group F, which suffered the greatest size reduction). It should be noted that this stress was no more severe on a day to day basis than that to which Group E were subjected for the shorter period prior to mating. Clearly then, the calcium/phosphorus stress was cumulative over the three months before mating. It may be that normally litters are protected by the body reserve of the mother under current nutritional stress but that there is a limit to the mother's reserve and that it may be destroyed by prolonged dietary deficiency previous to mating.

It is impossible to say if the morphology change (angle of fissure, fissure base, etc.) was a specific effect itself which oc-

*The tooth size scores for each rat were derived by averaging four measurements: the mesio-distal and the bucco-lingual crown dimensions of the mandibular first and second molars, photographed and measured without removal from the bone.

curs only in the cases of the greatest stress or if it was a differential effect produced in the smaller tooth due to the drawing together of the conical shaped cusps to give the effect of shallower fossae. The latter is a real possibility in the light of the fact that the size reductions seemed to originate at the cervix with no further reduction being attributable to the crown dimension which involves enamel tissues. If the thickness of enamel produced were the same on teeth of larger and smaller cervical dimensions, it can be seen that this would have an effect on the shape of the fissures between the cusps due to the convexity of the cusps' surfaces. This effect would seem logically to take the form of a reduction in fissure depth and a decrease in the fissure angle.

It would seem to be very important to relate future experiments on the caries susceptibility of inbred strains of rats to the morphology of their teeth. Since much of the animal caries originates in the fissures, it can be seen that the morphology of these fissures must be considered before concluding that there are genetic qualitative differences in the tooth structure. Furthermore, this experiment strongly indicates that tooth size may be an excellent criterion of the tissue quality (this point has been explored and established by concurrent human field studies) (Grainger and Paynter, 1956).

There is ample evidence that the Vitamin A deficiency, the Ca/P stress and the additional fluorides were passed along from the mother to the offspring presumably through the placenta and also during lactation.

In summary, it has been established that measurable size and morphological differences which are over and above genetic variations can be produced in rat teeth by variation of the diet. These morphological and size differences are not

necessarily accompanied by gross tooth surface defects, by severe histological changes in the tooth tissue, or by debilitating metabolic disturbances. In consideration of the measurable effects of the experimental diets and the great bulk of evidence in the literature to the effect that teeth are benefited in caries resistance by optimal calcium phosphorus nutrition, and by fluoridation, it seems not unlikely that future work on human teeth may make it possible to detect the influence of these factors on the tooth morphology or size, and that this may be related in turn to the phenomenon of caries resistance possessed by a fraction of the population.

SUMMARY AND CONCLUSIONS

Analysis of measurements of the upper first molar teeth of weanling rats has established that when these rats were born and nursed by mothers whose diet was either deficient in Vitamin A or had an abnormally high phosphate content, or contained fluoride, 12 ppm, the teeth were smaller than those of controls.

The smaller size of teeth in the group deficient in Vitamin A was related to the generally smaller size of these animals. This was not true in the case of animals on either the high phosphate diet or on the diet supplemented with fluoride.

When female rats were maintained on the high phosphate diet for a period of ten weeks prior to mating, then the teeth of the offspring of these rats were found to be smaller than any others, and in addition the depth of the mesial fissure was less, and the angulation of the sides of this fissure was greater than in either of the other experimental or control groups.

The technical assistance of Mr. George Pudymaitis and Mr. John Heeley is gratefully acknowledged.

TABLE I
Composition of Synthetic and Chow Diets

<i>Synthetic Diet</i>		
Carbohydrate (Sucrose).....	60%	
Fat (Corn Oil).....	4%	
Fibre (Agar).....	5%	
Protein (De-fatted Casein).....	25%	
Mineral Mixture*.....	5.7%	
Vitamin Mixture**.....	—	
<i>*Mineral Mixture</i>		<i>**Vitamin Mixture</i>
Calcium Lactate.....	14.9 gm./Kilo	Thiamin.....8.0 mg./Kilo
K ₂ HPO ₄	11.8 “ “	Riboflavin.....8.0 “ “
NaCl.....	2.5 “ “	Pyridoxine.....3.3 “ “
Ferric Citrate.....	1.0 “ “	Ca Pantothenate.....8.0 “ “
MgSO ₄ .7H ₂ O.....	1.0 “ “	Choline.....1000.0 “ “
MnSO ₄ . H ₂ O.....	0.5 “ “	Inositol.....1500.0 “ “
CuSO ₄ .5H ₂ O.....	80.0 mg. “	Vitamin E.....200.0 “ “
ZnCl ₂	16.0 “ “	Vitamin A (See Text)
KI.....	2.2 “ “	
Alum.....	1.2 “ “	
<i>Chow Diet Analysis</i>		
N.F.E.....	46.8%	
Fat.....	3.4%	
Fibre.....	6.0%	
Protein.....	23.1%	
Ash.....	8.4%	
<i>Minerals</i>		<i>Vitamins</i>
Calcium.....	14.0 gm./Kilo	Thiamin.....4.8 mg./Kilo
Phosphorus.....	10.0 “ “	Riboflavin.....5.1 “ “
Manganese.....	0.12 “ “	Pantothenic Acid.....18.6 “ “
Cobalt.....	0.06 mg. “	Choline.....1401.0 “ “
Copper.....	9.1 “ “	Niacin.....62.0 “ “
Iron.....	0.02 “ “	Folic Acid.....0.03 “ “
Iodine.....	1.0 “ “	Vitamin A.....13.2 units/gm
Added Salt.....	0.5% “ “	Vitamin D.....3.3 “ “

TABLE II
Size and Morphology of the Rat Maxillary First Molar in 20 Day Weanlings
According to the Diet of the Female Parent from Mating to Sacrifice of Young

	DIET GROUPS						VARIANCE COMPONENTS		
	A	B	C	D	E	F	Within Litters	Between Litters Treated the Same	Between Litters on Different Diets
	Complete Synthetic						High PO ₄ for short period	High PO ₄ for long period	
	Complete Synthetic Control	Laboratory Chow Control	Low Vitamin A	+ Fl 12 ppm.	High PO ₄ for short period	High PO ₄ for long period			
Mesio-distal cervical	77.422	77.437	74.406	74.979	74.985	71.368	5.6	19.9	127.0
Bucco-Lingual cerv.	55.843	55.768	53.781	54.417	54.303	52.526	2.1	9.5	41.0
Mesio-distal crown	86.588	87.021	84.750	85.667	85.455	81.396	6.7	24.1	89.2
Measurement of projection of mesio-distal crown over cervical meas.	9.480	9.833	10.406	10.458	10.470	10.000	1.99	4.93	5.87
Angle of Fissure	30.784	33.458	31.281	30.875	32.985	41.316	33.2	55.2	344.3
Depth of Fissure	18.353	worn	17.000	18.833	17.561	13.026	4.2 (d.f. 108)	8.7 (d.f. 30)	116.0 (d.f. 4)
5 day wt. Adjusted Mesio-distal cervical Bucco-lingual cerv.	8.780	9.700	6.594	10.275	10.018	7.100	—	8.12	49.7
	77.607	76.730	76.712	73.714	73.969	73.183	Errors of Estimate Components		
	55.948	55.374	55.065	53.714	53.738	53.536	—	12.6 7.3 (d.f. 29)	106.2 33.7 (d.f. 5)
Shape of Fissure	N	N	N	N	N	N	χ^2 Test of Independence		
Base	1	0	0	2	4	3	A.B. vs C.D.E.F.: P < 0.05		
V sharp	37	19	11	13	24	15	E.F. vs A.B.C.D.: P < 0.01		
Medium	13	5	5	9	5	1	d.f. within litters		
U rounded							d.f. litters treated same		
No. of weanlings	51	24	16	24	33	19	125		
No. of Litters	16	7	4	6	6	3	36		

TABLE III

Relation of Mean Tooth Size Scores* to Single and Combined Vitamin A and Calcium/Phosphorus Dietary Stress, in the Presence and Absence of Water Fluoride

Fluoride	Normal Vit. A and Ca/P Ratio	Vitamin A Deficient	High Phos- phorus Diet	Vitamin A Deficient & High Phosphorus
	21.82 ± 0.11	22.50 ± 0.44	22.32 ± 0.21	20.93 ± 0.37
Present	N 7 L 2	N 3 L 2	N 4 L 1	N 5 L 1
	23.22 ± 0.12	21.50 ± 0.57	21.82 ± 0.34	21.04 ± 0.28
Absent	N 4 L 1	N 3 L 1	N 8 L 3	N 10 L 2

N Number of weanlings

L Number of litters

* The tooth size scores for each animal were derived by averaging the mesio-distal crown dimensions, and the bucco-lingual crown dimensions, of the first and second mandibular molars.

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Common orthodontic problems of the mixed dentition*

by ARTHUR M. HAYES, B.Sc., D.D.S., Vancouver, B.C.

Dento-facial problems can interfere with function and development, both physical and mental. Surveys indicate that 50-60% of the population have some form of malocclusion. This high proportion is significant because about one third of those malocclusions are preventable.²

Preventive orthodontics is the basis of childrens' dentistry and should be a service rendered by the family dentist. The key to its practice is a sound understanding of the development of the human dentition. With this information, the recognition of abnormalities becomes easy and their correction often simple. Detecting an incipient dento-facial deformity and giving sound advice is much more effective than the skilled use of an appliance after the damage has been done.

This outline represents a brief summary of some of the common mixed dentition problems seen in daily practice. It is offered as an aid to the family dentist who is expected by the parents to advise them on the orthodontic needs of their children.

THE NORMAL MIXED DENTITION

The mixed dentition occurs from 6 to 12 years and can be divided into two parts:

- (1) Early — 6 to 10 years
- (2) Late — 10 to 12 years

*Presented before Vancouver and District Dental Society at Home Talent Night, February 7, 1956.

THE EARLY MIXED DENTITION (Fig. 1)

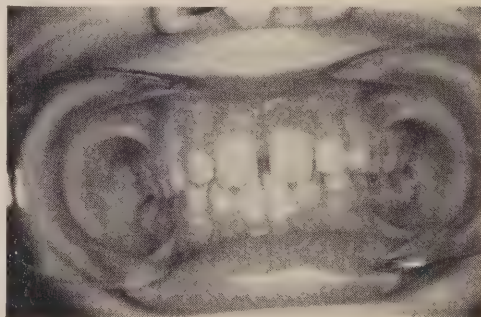


FIGURE 1.

Characteristic early mixed dentition. Note spacing between centrals which tends to become corrected with eruption of cuspids.

This stage, subject to variation, is characterized by:

- (1) The eruption of the first permanent molars.
- (2) This is followed by the eruption of the incisors.
- (3) This occurs in the lower jaw first.
- (4) Teeth appear earlier in girls than in boys.
- (5) The incisors do not appear in alignment. The centrals are separated and the laterals erupt lingual to them.
- (6) With continued growth of the jaws, and under the action of the tongue and labial musculature, the teeth tend to become aligned.

Many orthodontic problems begin in the mixed dentition and early correction is often simple. Here are the more common types of malocclusion found at this time:

A. CROSSBITES

Anterior and posterior crossbites occur frequently during the eruption of the first permanent teeth. Correction is simple when attended to early. Treatment later is more difficult and delay may be accompanied by:

- (1) abnormal function of the mandible
- (2) distortion of the facial profile
- (3) faulty positioning of other teeth

Anterior Crossbite (Fig. 2)—results in a prominent lower jaw appearance. Briefly, it may be due to:

- (1) Growth problem, e.g., overgrowth of the lower jaw. In extreme growth dysplasia, mandibular resection is the only known means of correction.
- (2) Tooth position, e.g., one or more lingually locked upper anterior teeth.

Generally speaking, if the patient can bring the upper and lower anterior teeth into an edge to edge relation, the condition can be corrected by tooth shifting.

Treatment can often be achieved by:

- (1) tongue depressor cut to width of the tooth
- (2) elongated crown
- (3) acrylic bite plane



FIGURE 2.

Anterior crossbite. Correction is simple when attended to early.

Posterior Crossbite (Fig. 3) may establish a lateral shift of the mandible. Most cases are corrected by banding the offend-

ing lower and upper teeth. The bands have been previously soldered with an attachment for elastics. Vertical cross elastics worn from three to six weeks will usually correct this condition.



FIGURE 3.

Posterior crossbite is often overlooked. Condition requires early treatment and is efficiently accomplished by vertical cross elastics.

B. SPACING

Spacing is normal for this age group (Fig. 1), but it may have abnormal origins. This should be determined early by full mouth x-rays at about six years. Some of the more common causes of abnormal spacing are:

- (1) *Congenitally missing permanent teeth* (Fig. 4)



FIGURE 4.

Congenitally missing laterals. When detected early can be treated by encouraging permanent teeth to drift mesially and close the space.

Upper laterals are the most frequently missing, followed by the second bicuspid. When discovered early, in selected cases, certain primary teeth may be removed early enough to allow the permanent teeth to drift mesially and close the space.³ An appliance may be necessary to assist this procedure.

(2) *Supernumerary Teeth* (Fig. 5) are usually found in the upper incisor area. They will be detected early by a full mouth x-ray series. Possible effects of supernumerary teeth are:

- (a) root resorption of adjacent teeth
- (b) abnormal positioning of the upper anterior teeth
- (c) cyst formation.

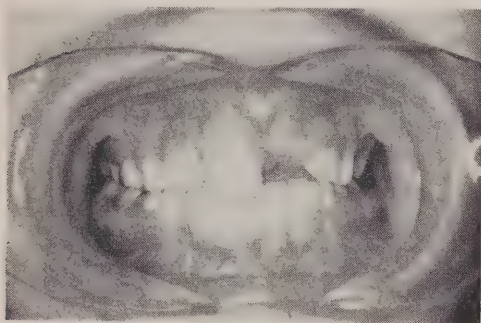


FIGURE 5.

Supernumerary tooth has prevented the eruption of the central incisor. Supernumerary teeth must be removed as early as possible.

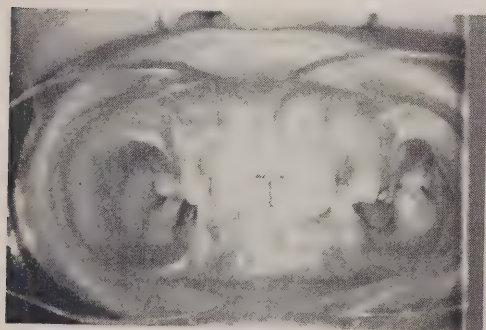


FIGURE 6.

Wide labial frenum is not necessarily abnormal. Frenectomy is usually not justified until permanent cuspids have erupted,

Treatment

Remove as early as possible.

(3) *Abnormal Labial Frenum*

The frenum is usually wide until the laterals erupt (Fig. 6). It normally decreases in size and the connection with the incisive papilla atrophies with age and the eruption of the anterior teeth.

Treatment

Frenectomy is usually not justified until the permanent cuspids have erupted. If the diastema between the centrals does not close at this time, mechanical closure of the space will often result in atrophy of the frenum. At this stage, if the space and frenum persist, and the frenum is still enlarged and extends in a cord-like mass onto the palate, frenectomy is recommended.

(4) *Habits*

Two of the commonest mouth habits are thumb sucking and tongue thrusting.

(A) *Thumb Sucking* (Fig. 7) is one of the most controversial issues in dentistry. The parent is usually in a dilemma because of the opposing schools of thought. Thumb sucking or finger sucking is a necessary means of gratification for young children. It can be considered normal up to the age of 4½ to 5 years, since it is a remnant of the waning suckling

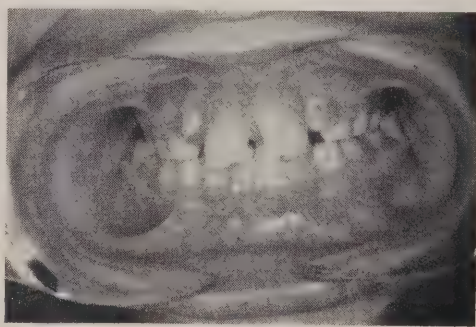


FIGURE 7.

Effects of intense thumb sucking. Note accentuated spacing, labial inclination and protrusion of the anterior teeth,

reflex.⁴ If continued beyond this age, it can be considered abnormal, and research⁸ has shown conclusively that it has harmful effects on the dentition. Depending on the manner, intensity and duration of the sucking, it can cause:

(1) accentuated spacing of anterior teeth.

(2) labial inclination and protrusion of the anterior teeth which makes them susceptible to fracture.

(3) open bite and elongation of the anterior segment.

The literature on this subject is profuse and devices for correction range from the mechanical to the psychological. It can be stated without reservation that none of these schemes will work unless the child himself wants to stop the habit.

Treatment of thumb sucking consists mainly of getting the child to want to stop and then helping him help himself. Method:

(a) The problem should be approached when the patient will respond to reason, usually at about 5½ to 6 years of age. The parents and family must agree to absolve themselves from the problem as their continual scolding only aggravates the situation.⁷ The matter must be dealt with by the dentist and the child.

(b) Remove any stigma or feeling that the child is abnormal. Impress on the child that you also have had bad habits—everybody has.

(c) Show him models illustrating the effects of thumb sucking. Then show him teeth in good occlusion and ask him which he prefers. Describe the advantages to be gained by discontinuing the habit.

(d) Gain the child's confidence. Assure him that you want to help him if he wants to be helped. Explain that:

(1) the thumb "forgets"

(2) mother is to purchase a "magic lotion". This is a bitter solution labelled especially for him. Emphasize that this "lotion" is not a punishment, but rather a reminder. He is to apply it whenever he feels it is needed and it will remind

the thumb. At first taste of the bitter solution, the thumb will fly out of the mouth like magic. Ask the child to phone you in one week and compliment him on any progress. The child will often discontinue the habit in a week or so.

(b) Tongue Thrusting (Figs. 8, 9) may result from a defect of some fibres of the glossopharyngeal nerve, either congenitally or following tonsilectomy.⁴ There is a lack of orientation of the tongue. When the patient swallows, he thrusts his tongue against his teeth. This exerts an abnormal pressure which upsets the balance of forces between the tongue and the oral musculature, and allows the teeth to move. A lisp may be associated

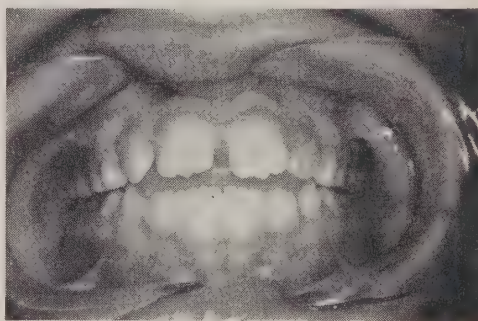


FIGURE 8.

Tongue thrust. Characteristic open bite and labial displacement which accompanies tongue thrusting.

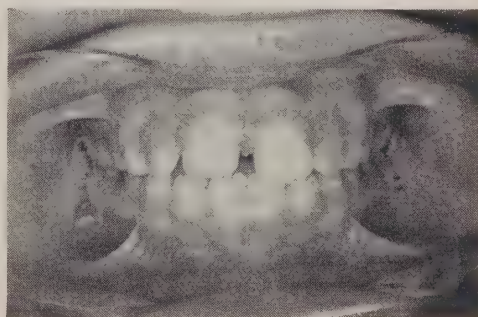


FIGURE 9.

Spontaneous improvement achieved after partial correction of tongue position during swallowing. Bite has closed considerably but protrusion remains.

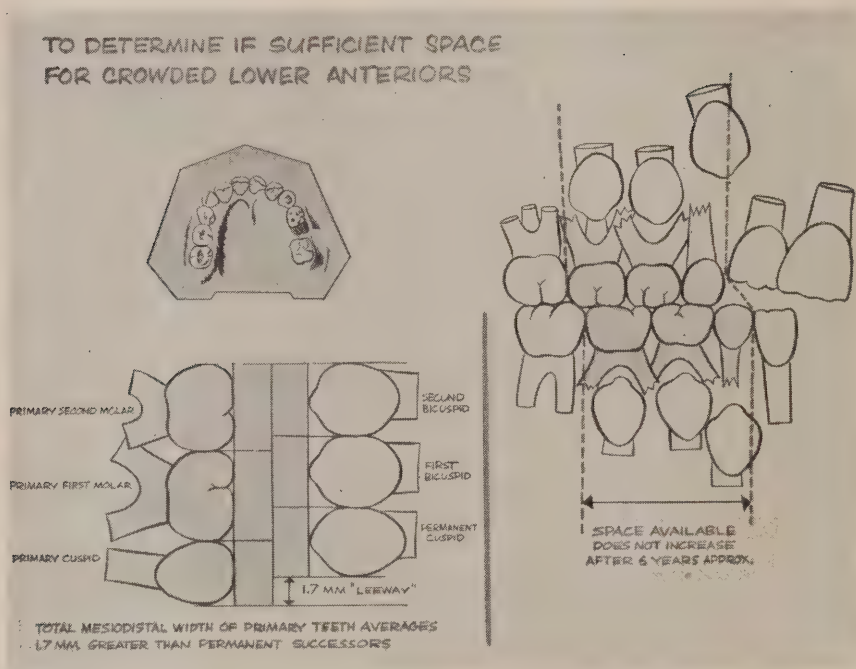


FIGURE 10.

with the pronunciation of the letter "s" and quite often, the gag reflex is absent.

Treatment consists of a swallowing exercise to correct the tongue position, and a lip strengthening exercise to counteract the force displacing the teeth.

(1) Swallowing Exercise

(a) Draw an imaginary line across the palate from first molar to first molar. Press the centre of this line with a sharp instrument.

(b) Place a small piece of "Lifesaver" on the anterior half of the tongue and instruct the patient as follows:

- (1) Press the candy on the spot marked.
- (2) Close the teeth.
- (3) Bring the lips together and swallow but do not swallow the candy.
- (4) Repeat this exercise ten times, three times a day.

(2) Lip Exercise

Instruct the patient as follows:

- (a) Close the teeth.

(b) Bring the lips together.

(c) Attempt to move the corner of the lip on one side as high as possible and maintain this position until ten has been counted. Then relax the lip.

(d) Repeat on the other side.

(e) Practise the exercise several times daily.

In mild cases, where the anterior teeth have moved forward but the molars remained stationary, removable appliances can be used for correction.

C. CROWDED PERMANENT LOWER INCISORS IN THE MIXED DENTITION

"Will there be enough room?" (Fig. 10) Research and clinical analysis conclude that:

- (1) there is no further growth in length of the ridge anterior to the lower first permanent molars after approximately six years of age.⁶
- (2) the total mesiodistal widths of the

mandibular primary cuspid and the first and second primary molars on one side average 1.7 mm. greater than the widths of their permanent successors, the cuspid and the first and second bicuspid. In the maxillary arch, the difference is 0.9 mm. This excess of 1.7 mm. on one side is called "leeway" and is not available for straightening the lower anterior teeth. It is required by the first permanent molars for their normal forward movement after the loss of the second primary molars.

With these two facts, we can now determine whether or not space is available for the lower teeth by using the following simple formula:

Space Present minus Space Needed equals Leeway.

If the leeway exceeds 1.7 mm. on each side, the extra can be used for the alignment of the crowded lower incisors.

Method to Determine Leeway

(1) Using a study model, measure and record the distance from the distal surface of the lower lateral to the mesial surface of the first permanent molar.

(2) Using a good x-ray of the unerupted cuspids and the first and second bicuspid, measure and total the mesiodistal widths of their crowns, and record.

(3) Subtract the figure obtained in step 2 from that obtained in step 1. The result is the leeway.

(4) Repeat steps 1, 2 and 3 on the other side. Total the leeway of both sides. If this exceeds 3.4 mm. (1.7 mm. on each side) there is some room for the alignment of the crowded incisors.

(5) To determine if this is sufficient compare this excess with the distance needed to straighten the lower teeth. This last figure can be measured from the models.

In most cases, if the crowded condition is not corrected, the teeth will remain this way even though there is sufficient space. Because these teeth occupy less space in the arch when they are crowded, the posterior teeth can drift farther forward than normally with result-

ant malocclusion. Therefore, when space is available, the Nance procedure of serial extraction can often be applied to advantage.

Procedure

The first step entails removal of the primary cuspids. Its purpose is to give enough space for the autonomous unravelling of the lower anteriors. If they do not correct themselves, an appliance can be used. The early extraction of the primary cuspids will speed the eruption of the permanent cuspids. As they erupt, due to their width plus the space used up by the incisors unravelling, it is sometimes advisable to remove the first primary molars prematurely in order to give more space, and let the first bicuspid erupt. In many cases it is wise to remove the second primary molars and permit the second bicuspid to erupt while the first bicuspid is erupting. During this entire procedure the occlusion is checked to see if there is any tendency for forward slippage of the back teeth. If so, a preventive lingual arch is placed.

THE LATE MIXED DENTITION

This stage is characterized by the completion of the permanent dentition. It is marked by the eruption of the first bicuspid at about 10 years of age, followed by the second bicuspid and cuspids at 11 to 12 years, and the second molars at about 12 years. The eruption of the cuspids closes the space between the upper centrals. Problems at this stage involve:

- (1) overly retained primary teeth
- (2) tardy eruption of permanent teeth
- (3) impacted cuspids
- (4) extraction for treatment

1. Overly Retained Primary Teeth (Fig. 11)

This problem, frequently overlooked, can result in:

- (a) ankylosis of the primary tooth
- (b) deflecting the permanent successor or even preventing its eruption

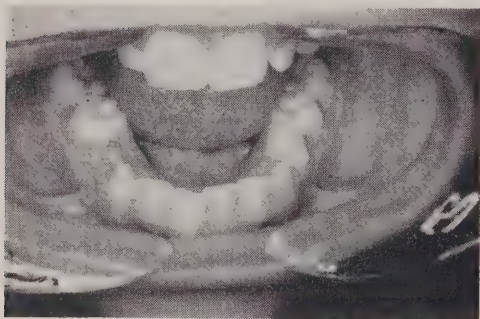


FIGURE 11.

Overly retained primary teeth. Girl, age 13. Prolonged retention of primary molars which are wider than the bicuspid has resulted in crowding and protrusion of anterior teeth.

(c) disturbances in the occlusion and arrangement of the erupted teeth e.g. prolonged retention of the primary molars, which are wider than the bicuspid, may result in protrusion of the anterior teeth.

Treatment

If teeth are overly retained as determined by the dental age of the patient, these teeth should be removed.

2. Impacted Permanent Cuspids (Fig. 12)

This condition is so common as to warrant special mention. The cuspids are vulnerable to impaction because of their position in the arch. Deflection and impaction of these teeth is often due to overly retained primary cuspids. If x-ray shows little or no resorption of the primary cuspids at approximately 11 years dental age, removal of the primary tooth is usually indicated.

Treatment of Impacted Permanent Cuspids (Fig. 13)

(1) Remove the soft tissue and overlying bone

(2) Pack for several weeks to keep the area exposed

This procedure will usually allow the

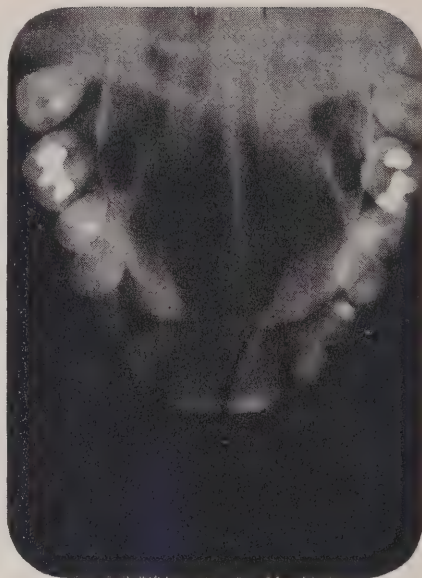


FIGURE 12.

Impacted permanent cuspids and overly retained primary cuspids.

tooth to erupt although an appliance is needed in most cases to help the tooth into the arch.

3. Tardy Eruption of Permanent Teeth

(a) Causes

(1) Loss of space because of the drift of the proximal teeth. Treatment—in-

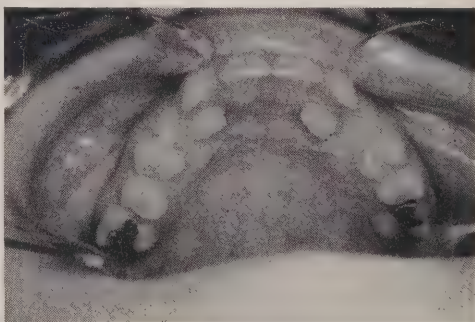


FIGURE 13.

Shows permanent cuspids in Figure 12 following extraction of primary teeth and removal of overlying tissue and bone. Teeth were subsequently moved into position using orthodontic appliance.

volves regaining the space. If the tooth is normal, it will erupt.

(2) Overly retained primary teeth may leave a sclerosed alveolar bone over the crown of the unerupted tooth. Treatment—remove the bone over the crown.

(3) Chewing on the gums can cause a keratinized epithelium and delay eruption. Treatment—incise this tissue.

4. Extraction of Teeth as a Method of Treatment

(1) This procedure is justified when there is not enough bone structure to support all of the teeth in alignment.

(2) It is a dangerous practice when the post-extraction shifting of the remaining teeth is not directed by orthodontic means.

(3) The teeth rarely rearrange themselves properly after extractions, and the results may be:

- (a) spacing
- (b) traumatic occlusion
- (c) periodontal problems
- (d) a new malocclusion

(4) Extraction is an orthodontic aid and not the sole means of correction of crowding.

(5) Under ordinary conditions, when extraction is required, the following teeth should not be removed:

- (a) upper or lower cuspids
- (b) lower incisors
- (c) upper incisors

The mixed dentition period is a critical one, and should be watched for the possible beginnings of malocclusion. Influences which at any other period might be regarded as minor, may have profound effects if they occur during the transition from one dentition to the other. Proper examination of the young patient is the first step in preventive orthodontics and should include the following:

- (a) a full mouth x-ray series
- (b) determination of the dental age of the patient
- (c) oral examination:
 - (1) count the teeth
 - (2) check teeth in occlusion and look for crossbites and molar relations
 - (3) check functional occlusion of the teeth
 - (4) observe the swallowing
 - (5) check for habits.

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The dental profession is to be commended for its almost solid backing of fluoridation campaigns. Fluoridation of public water supplies will lead to a decrease in dental defects and, if the dentists were selfish in their motives, they would be among the first to oppose or at least obstruct it. But they are among the leaders in urging its adoption, often against strong opposition from public groups and influential individuals. In doing this, they have displayed themselves as men and women with a keen sense of public duty.

Halifax Herald.

The dental public health program in St. Catharines-Lincoln health unit

by R. A. CONNOR, Dental Health Director of St. Catharines-Lincoln Health Unit and
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Department.

INTRODUCTION

The purpose of the dental program in the St. Catharines-Lincoln County Health Unit is to encourage the people to improve their dental condition; firstly, by making more intelligent use of the known dental control measures, and secondly in order to reduce the complications and treatment costs of unprevented defects by seeking the services of the private dentist beginning at an early age and regularly thereafter.

Although two somewhat similar programs had been previously introduced in Ontario under the sponsorship of the Canadian Red Cross Society, the program in the St. Catharines-Lincoln Health Unit was the first to be sponsored by the official health agency of the Province. The program was supported jointly by a grant-in-aid* arranged through the Provincial Health Department and by the Local Board of Health. The total budget for the program in the initial year was \$11,400.00 and this has increased over the seven years to \$18,000.00 per year.

The staff consists of a director who is a graduate in dental public health, a dental assistant, a stenographer-typist, and since the beginning of the seventh year a dental hygienist.

Geographically the Health Unit consists of a belt of rich fruit farm land roughly 20 by 40 miles in area. It contains the city of St. Catharines, a pros-

perous manufacturing centre. There are very few truly indigent families, except for some Welfare recipients, mainly concentrated in the city.

In 1949, at the beginning of the program, the populations of the city and of the surrounding country were 37,580 and 39,171 respectively. These numbers have increased over the seven years largely as a result of receiving new immigrants from other parts of the Province, Canada and Europe. By 1956 these numbers had increased to 39,171 and 67,313 respectively. The number of school children involved in the program in the latter years is in the order of 18,000.

THE PROGRAM ACTIVITIES

The underlying philosophy of the program has been from the beginning that dental health is inseparable from the general health of the people. Hence the dental program has been closely integrated with the overall Health Unit Program and particularly with regard to the work in the pre-school and school age children. In the schools and in the child health clinics the support of the whole staff, particularly the public health nurses and health educationalist, has been important to the success of the program.

The activities of the dental staff may be divided roughly into the work in the schools and in the community at large.

The work in the schools has consisted

*National Health Grant Project No. 605-9-8.

mainly of giving yearly a careful examination of all pupils and notifying* the parents of the child's dental needs. These examinations were followed by classroom educational talks by the dentist, not only for the purpose of teaching the children but in order to secure the support of the teachers, upon whom the continuation of the interest throughout the year was dependent.

For the junior grades the classroom talks stressed the avoidance of sweet foods in between meals and the brushing of the teeth immediately after eating, whether it be a meal or a snack. In the interest of the general health, but especially to ensure good nutrition at the time of the development of the teeth, the children were constantly instructed to use milk, citrous fruits, and except in the summer, to take Vitamin D daily. Finally the children were urged to have their parents take them and their younger brothers and sisters to their family dentist for early and regular dental care.

In addition to the above the senior grades were given some background information regarding dental disease and why its control depended largely on their individual co-operation. Question periods were held and judging from the number of intelligent questions asked, the interest of the pupils has continued to be high.

Lastly in the schools the dental director held conferences with the school staff to explain what was being attempted and to seek the teachers' assistance in repeating the lessons to the children from time to time. At these conferences the teachers were given lists of the dental conditions for the individual children in their classrooms (Figure I.) The teachers showed great interest, urging their pupils to seek treatment so that their classroom might have "100 per cent Good Teeth". The same summary information was entered on the child's general health record card for the

guidance of the school nurses who also followed up the neglected cases in their home visiting.

On the community basis the parents' interest was again sought through radio broadcasts and twice-monthly newspaper articles which repeated the same information as was taught to the children in the schools. But in addition the need for water fluoridation and the importance of the deciduous dentition were stressed. Direct contact with the parents was obtained through the child health clinics and through lectures to school organizations. Opportunities were sought to address the county council, the city council, the school boards, church groups, women's institutes and the service clubs.

All the local practising dentists were individually contacted at the beginning of the program and special meetings were held each year to explain the program's objectives and to receive their comments and suggestions. Special courses in children's dentistry and orthodontics were organized locally with the aid of the University of Toronto* at which actual demonstrations of operative procedures were given for the benefit of the local dentists.

In the fifth year a more concentrated effort was undertaken to reach the three year old children in the community. Many of the children came to the child health conferences as a result of the urging of the Public Health Nurses and the others were contacted as a school project. Letters were sent home telling parents of the availability of an individual consultation service for the three year olds and urging them not only to bring their children but to circulate the information to other parents who could not be reached in this way. It is probable that two-thirds of the three year old children in the region were contacted altogether. This was considered very good in the absence of a complete listing of the children before school registration age. At the pre-school conferences it was found that the mother

*The notification is done by sending home cards for various dental defects. The cards are signed by the private dentist upon completing the treatment and are then returned to the school for recording on the child's health record.

*The Dental Seminar Program

CLASS DENTAL HEALTH CONDITIONS

TOWNSHIP.....NAME AND NUMBER OF SCHOOL.....

TEACHER..... GRADE..... DATE EXAMINED.....

PLEASE LIST BELOW ALL THE PUPILS ENROLLED IN YOUR ROOM STATING NAME AND AGE

[illegible]

Figure 1. An example of the classroom lists used as a frame for sampling and for informing the teacher of the general dental condition. Explanation of the code:

*—child selected in advance for detailed examination for statistical purposes; Sp. Mn.—Space Maintainer in position; Or. Ap.—orthodontic appliance in position; C.—teeth need to be filled or extracted; O. orthodontic treatment needed; N. D.—no noticeable defects; S.—space maintainer is suggested; O. H.—teeth need cleaning or scaling; Gd. Th.—Good teeth (mouth in healthy condition with small defects); R. C.—rampant caries (mouth in bad condition and neglected); C. I.—caries immune; T. B. X.—needing urgent extractions.

It should be clear that the statistical data tabulated are based on a more complete examination of the systematic sample of children and not on the above records.

took much more interest in the teaching when it was given individually and with reference to her own child, than in general terms during a group lecture.

Due to the rapid increase in population and the increasing number of activities under the dental program, the detailed charting of the dental condition of each child was only carried out for the first two years. After this time the recorded statistical data was obtained by systematic random sampling of children from the school enrolment lists, although the examination itself was continued without charting for the rest of the children.

RESULTS

The statistical system on which the results are judged was developed concurrently by the Dental Statistics Section of the Ontario Health Department for use in this and other Dental Health Programs. All items of information presently gathered are not included in this report since the statistical system, on which they were based, had not been developed in the initial years. For the same reason the length of residence in the Health Unit was not originally recorded and thus in the main tables the native born children are only segregated for the latter years.

However, this information does permit one to see the effect that any dissimilarity between native born children and those taking up residence at a later date would have on the total figures. In addition by way of corroboration a retabula-

tion of the data for native born children in Clinton and Grimsby townships was undertaken by the Dental Statistics Section of the Division of Medical Statistics in the Ontario Health Department in order to recheck the data on the prevalence of dental caries.

TABLE I
Percentage of Children Having Caries Treatment Completed or Never Needed by Age, Date of Examination, and Residency

Age Last Birthday	Residency	School Year When Examinations Conducted					
		1949-50	1950-51	1951-52	1952-53	1953-54	1954-55
		% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
5	Natives Migrants *Total	26.6 (214)	25.7 (401)			37.4 (690) 37.0 (343) 37.3 (1033)	40.5 (190) 13.0 (115) 30.4 (305)
7	Natives Migrants *Total	15.1 (832)	13.5 (927)	17.6 (414)	14.9 (168) 22.0 (72) 17.1 (240)	24.8 (424) 21.0 (334) 23.1 (758)	36.5 (443) 28.5 (326) 33.0 (766)
9	Natives Migrants *Total	6.4 (698)	11.9 (782)	17.1 (414)	20.0 (155) 12.7 (63) 17.9 (218)	32.0 (266) 24.2 (239) 28.3 (505)	42.3 (307) 37.8 (285) 41.0 (592)
11	Natives Migrants *Total	11.2 (701)	15.7 (715)	21.3 (324)	27.9 (147) 18.3 (60) 26.6 (207)	33.7 (246) 36.3 (190) 34.9 (436)	41.3 (336) 41.7 (290) 41.5 (626)
13	Natives Migrants *Total	9.6 (541)	15.1 (558)	21.0 (272)	20.5 (88) 20.7 (63) 20.5 (151)	27.8 (180) 31.1 (198) 28.8 (378)	38.1 (239) 39.4 (221) 38.7 (460)

(n) Number of children examined.

* Differences between the combined percentages of the first two years as compared to the combined percentages of the last two years are beyond chance for the ages indicated.

THE LEVEL OF TREATMENT

In Table I are given the percentages of children having their dental caries treatment completed or never having needed treatment at the time of examination. There has been a general increase over the six years of the program, reflecting the parents' and practising dentists' acceptance of responsibility for treatment of the children upon being told of the needs. In the latter years it is clear that the children who have lived in the region for their whole life are considerably better off than those who have come in at various ages after birth or who have had less than complete exposure to the six years of instruction.

Table II shows the percentages of children who have at least visited the dentist for some treatment as evidenced by the presence of one or more fillings in their mouth or the signs of a dental extraction. It is clear that the children are being introduced to the dentist at earlier ages than previously, making it possible for the dentists to work on incipient rather than advanced cavities. The children who have lived all their lives in the Health Unit area or who have had full exposure to the program show a higher response than the immigrants. The reciprocals of the percentages in Table II give an indication of the complementary reduction in neglected children.

TABLE II

Percentage of Children who have Visited a Dentist as
Evidenced by at least one Filling or Extraction

Age last Birthday	Residency	1951-52	School Year when Examined			
			1952-53		1953-54	
		% (n)	% (n)	% (n)	% (n)	% (n)
5	Native Born Immigrants Total			43.3 (690)	62.1 (190)	
				41.4 (343)	53.0 (115)	
				42.7 (1033)	58.7 (305)	
7	Native Born Immigrants *Total	41.8 (414)	52.4 (168)	62.5 (424)	72.0 (443)	
			41.7 (72)	58.4 (334)	67.2 (323)	
			49.2 (240)	60.7 (758)	68.8 (766)	
9	Native Born Immigrants *Total	58.5 (414)	69.0 (155)	71.4 (266)	76.9 (307)	
			60.3 (63)	64.9 (239)	76.2 (285)	
			66.5 (218)	68.3 (505)	76.5 (592)	
11	Native Born Immigrants *Total	65.1 (324)	73.5 (147)	78.5 (246)	85.7 (336)	
			78.3 (60)	60.5 (190)	76.2 (290)	
			74.9 (207)	70.6 (436)	83.1 (626)	
13	Native Born Immigrants *Total	61.4 (272)	84.1 (88)	78.3 (180)	79.5 (239)	
			77.7 (63)	70.7 (198)	86.0 (221)	
			81.5 (151)	74.3 (378)	82.6 (460)	

(n) the number of children examined

* Differences between the combined percentages for the first two years as compared to the combined percentages for the last two years are beyond chance for the ages indicated.

The decrease in average numbers of unfilled carious surfaces and the final status in terms of teeth needing restorations are shown in Table III. The system of recording was changed in the sixth year to conform with the records of similar pro-

grams in the Province and is to be continued in the future in terms of tooth units. It is apparent that the residual of untreated carious lesions has been reduced to less than half the backlog present in 1949-50.

TABLE III

Average Number of Tooth Surfaces or Teeth Needing Restoration Per
Child for Children Born and Raised in Grimsby and Clinton Townships by
Age and Year of Examination

Age Last Birthday	Counting Unit	1949-50		1950-51		1953-54		1954-55	
		average	(n)	average	(n)	average	(n)	average	(n)
7	Surfaces Teeth	5.17	(95)	4.14	(71)	2.84	(103)	—	—
		—		—		—		1.15	(58)
9	Surfaces Teeth	7.17	(68)	3.97	(87)	1.54	(35)	—	—
		—		—		—		1.42	(36)
11	Surfaces Teeth	4.43	(72)	2.70	(60)	1.15	(40)	—	—
		—		—		—		1.49	(44)
13	Surfaces Teeth	6.46	(26)	2.80	(47)	2.22	(32)	—	—
		—		—		—		1.01	(46)

— Data not tabulated

(n) Number of children examined.

TABLE IV

Percentage of Children Caries Free on Permanent Teeth
According to Age, Residency in St. Catharines Lincoln Health Unit
and Year of Examination

Age Last Birthday	Residency	1949-50	Year of Examination				
			1950-51	1951-52	1952-53	1953-54	1954-55
7	Natives	—	% (n)	% (n)	% (n)	% (n)	% (n)
	Migrants	—			47.6 (168)	55.0 (424)	53.0 (443)
	*Total	—	45.2 (927)	49.4 (437)	51.4 (72)	64.1 (334)	51.4 (323)
9	*Natives	—			48.8 (240)	59.0 (758)	52.0 (766)
	Migrants	—			15.5 (155)	18.0 (266)	20.2 (307)
	Total	—	14.3 (782)	20.5 (361)	15.9 (63)	14.2 (239)	19.2 (285)
11	Natives	—			15.6 (218)	16.2 (505)	19.8 (592)
	Migrants	—			8.2 (147)	11.8 (246)	6.5 (336)
	*Total	—	6.3 (715)	8.0 (362)	5.0 (60)	7.9 (190)	11.4 (290)
13	Natives	—			7.2 (207)	10.1 (436)	8.8 (626)
	Migrants	—			4.5 (88)	3.9 (180)	7.5 (239)
	Total	—	3.8 (558)	9.9 (141)	7.9 (63)	8.1 (198)	6.3 (221)
					6.0 (151)	6.1 (378)	7.0 (460)

(n) Number of children examined.

* Differences between the combined percentages of the first two years as compared to the combined percentages of the last two years for total population, and differences between 1952-53 and the combined last two years for native children are beyond chance for the years indicated.

THE DENTAL CARIES PREVALENCE

The percentages of children free of caries for the permanent teeth has apparently increased during the time the program has been in effect, Table IV. The figures for the native born children are only available for the last 3 years of the program but are sufficient to indicate that the increase in apparently resistant children for the whole school enrolment is not explainable in terms of the immigration of children with a higher caries resistance. The immigrants included a great number of children who were not recent arrivals, and one can only say, that on the average, they have been exposed to the teachings about half the time of the native born children for the same age.

Confirmation of the decrease in prevalence of dental caries is seen in Table V which gives the average numbers of decayed, missing, or filled permanent teeth and Tooth Surfaces for children, born and raised in the Townships of Clinton and Grimsby. As with Table III the units

for the years 1954-55 onward are to be teeth to conform with other regions of the Province. One might expect a part of the reduction in D.M.F. tooth surfaces to be explainable in terms of the earlier treatment which prevents the spreading of the lesions, but to a much less extent would this be true for the tooth units. The earlier filling of small lesions could not be the explanation for the increase in percentages of children with no caries experience given in Table III and hence it is concluded that some real reduction in the caries attack has occurred over the period of the Educational Program and this is beyond the reduction in tissue involvement attributable to the earlier and more complete treatment.

The relative decrease in the prevalence of caries in the smooth and on the pitted surfaces is indicated in Table VI for native born children of Grimsby and Clinton Townships. It is very interesting to note that for these lower first permanent molars the caries reduction, again mainly evident at ages 7 and 9 years, is only de-

TABLE V

Mean Number of Decayed, Missing, or Filled Permanent Tooth Surfaces,
or Teeth Per Child for Native Born Children of
Grimsby and Clinton Townships by Year of Examination

Age Last Birthday	Scoring Unit	Year of Examination				
		1949-50	1950-51	1952-53	1953-54	1954-55
7*	Surfaces Teeth	average (n)	average (n)	average (n)	average (n)	average (n)
		1.63 1.11 (94)	2.06 1.75 (69)	1.24 1.08 (25)	0.65 0.55 (103)	— 0.96 (58)
9*	Surfaces Teeth	7.14 3.61 (66)	5.13 3.03 (87)	4.24 2.35 (17)	2.37 1.74 (35)	— 2.37 (36)
11	Surfaces Teeth	7.39 4.68 (65)	6.78 3.95 (58)	7.15 3.85 (26)	6.25 3.55 (40)	— 3.96 (44)
13	Surfaces Teeth	11.38 7.39 (26)	10.30 6.55 (47)	12.36 7.73 (11)	10.28 6.16 (32)	— 5.12 (46)

(n) Number of children examined.

* The difference between the combined first two and the combined last two years average D.M.F. tooth scores is beyond chance according to the approximate test given on page 39 of the Manual, "Evaluation of Community Dental Health", for the indicated ages.

TABLE VI

Caries Affected Smooth (Mesial) and Fissured (Buccal Pits and Occlusal) Surfaces
of the Lower First Permanent Molars of Native Born Children
in Clinton and Grimsby Townships

Age Last Birthday	Surface of L.I.P.M.	Year of Examination			
		1949-50	1950-51	1953-54	1954-55
7		% (n)	% (n)	% (n)	% (n)
	Mesial	1.60 (188)	0 (138)	1.78 (195)	3.44 (116)
	*B. Pit.	7.98 (188)	9.86 (138)	2.55 (195)	0.86 (116)
	*Occ'al	27.66 (188)	46.49 (138)	23.21 (195)	25.86 (116)
9	Mesial	13.64 (132)	13.22 (174)	13.04 (69)	13.04 (69)
	*B. Pit.	26.52 (132)	25.86 (174)	8.69 (69)	11.59 (69)
	*Occ'al	69.70 (132)	63.79 (174)	46.37 (69)	60.86 (69)
11	Mesial	24.22 (128)	29.31 (116)	29.57 (71)	31.08 (54)
	B. Pit.	26.52 (128)	20.69 (116)	19.71 (71)	22.97 (54)
	Occ'al	68.75 (128)	64.66 (116)	66.19 (71)	72.97 (54)
13	Mesial	35.85 (52)	30.55 (72)	38.88 (54)	29.72 (74)
	B. Pit.	22.64 (52)	25.00 (72)	14.81 (54)	22.97 (74)
	Occ'al	71.60 (52)	94.44 (72)	83.33 (54)	67.56 (74)

(n) Number of First Molars present and examined.

* Differences between the combined percentages for the first two years as compared to the combined percentages for the last two years are beyond chance for the ages and surfaces indicated.

monstrable on the pit and fissure surfaces and not on the smooth surfaces.

Table VII gives the results of the survey among pre-school children which was undertaken in the season of 1953-54. It is clear from these figures that the ravages

of dental caries begin at a very early age. The children examined in this pre-school group were selected as a result of their parents bringing them voluntarily to the school or clinic and it is impossible to state if they are completely typical of the whole age groups.

TABLE VII

Dental Conditions for Three and Four Year Old Children examined in
Regions of the St. Catharines-Lincoln County Health Unit in the School Year of 1953-54

Characteristic	Age	Clinton Twp.	Grantham Twp.	Niagara Twp.	Grimsby Twp.	St. Catharines Twp.	TOTAL
Percentages of children with 1 or more decayed missing or filled teeth	3	% (n) 27.0 (26)	% (n) 28.8 (80)	% (n) 39.6 (48)	% (n) 41.7 (12)	% (n) 40.0 (90)	% (n) 35.2 (256)
	4	50.0 (12)	64.4 (87)	69.7 (56)	45.5 (11)	58.0 (45)	62.6 (211)
Mean number of decayed, missing or filled teeth per child		average	average	average	average	average	average (n)
	3	0.61	1.10	1.29	2.00	1.20	1.16 (256)
	4	2.41	2.75	2.32	2.45	2.60	2.57 (211)
Mean number of decayed, missing or filled teeth surfaces per child		average	average	average	average	average	average (n)
	3	0.80	1.57	1.81	2.00	1.47	1.52 (256)
	4	5.00	4.67	4.41	2.72	4.46	4.47 (211)
Mean number of unfilled carious tooth surfaces per child		average	average	average	average	average	(n)
	3	0.57	1.26	1.18	2.00	1.38	1.25 (256)
	4	3.25	2.77	3.35	1.63	2.73	2.88 (211)
Percentages of children with one or more prematurely lost deciduous teeth		%	%	%	%	%	(n)
	3	0	5.0	2.1	0	2.2	2.7 (256)
	4	16.7	12.6	3.6	0	13.3	9.9 (211)

(n) Number of children volunteering for Examination.

DISCUSSION

This paper substantiates the conclusions of the Welland and District Dental Health Program ⁽²⁾ in the marked increase in dental care. There is no doubt that the practising dentists were willing and able to treat the children's teeth and that the parents accepted responsibility for the cost of treatment when informed of their children's needs.

It has also been demonstrated that children and parents were sufficiently interested in dental health to undertake to follow general instruction on how to reduce their dental needs.

Two important principles follow from these findings: (1) first that in view of the public's demonstrated willingness to undertake individual control measures it is paramount to intensify research so that the control measures taught may be as specific and efficient as possible; (2) in consideration of the fact that the success

of control measures (excluding water fluoridation) and the avoidance of the involved and costly treatment necessitated by neglect are largely dependent on the intelligent acceptance of responsibility on the part of the individual, it seems more than expedient for the public health agencies to concentrate on the encouragement of those who demonstrate interest in maintaining their oral health. This can be done most effectively by offering diagnostic assistance and teaching control methods.

Over the six years of the program there have come to light a minority of cases where families in strained financial circumstances have not been able to meet the cost of dental treatment. Very frequently these cases of temporary dental indigency were precipitated by the need for extensive and costly services after years of complete neglect and hence these have become rarer with the general ac-

ceptance of early and regular dental care throughout the Health Unit. On the other hand it is undeniable that there is a clearly definable group of true dental indigents. They are mainly the children of Welfare Recipients, for whom it is highly desirable to have services available at public expense as they have no regular source of income from which to pay even incremental dental care. This latter group must be considered as true wards of the public whereas the former have merely come into temporary difficulties due to lack of guidance or sense of responsibility.

With reference to the reduction in dental caries attack, the fact that the reduction is confined to specific ages argues against the differences being due to change in the method of examination. The children aged 9 or younger for the surveys of 1953-54, and 1954-55 would not yet have erupted their lower first permanent molars at the time of the beginning of the study in 1949-50 and it is quite possible that the observed decrease in caries attack is due to improved teeth development as the result of the concentrated nutritional education begun at that time. Certainly this point should be followed closely in the next few years until it is established or clearly disproven. The correlation between smooth and pitted surface caries is rather low in individuals' teeth and on the average geographically, hence it is not surprising that the surfaces respond differently to given control measures. This phenomenon has been observed for water fluoridation⁽⁹⁾ which in contrast to the above yields the greatest protection to smooth surfaces of the teeth. It is logical to speculate whether the type of caries reduction reported in this paper could occur in a water fluoride region and so produce a caries reduction greater than either factor applied singly. The educational program described in this paper has never been intended to be a substitute for water fluoridation which has been constantly advocated but as yet not adopted in the region. However, since the pitted surface

defects account for the major amount of caries in children it is quite possible that an important decrease in the overall caries attack will follow in the succeeding years.

The very early onset of dental caries as shown for three and four year old children emphasizes the need for dental supervision from a very early age. Administratively it is very difficult to gain access to the pre-school children and it is felt that steps might be taken to maintain registration of all two or three year old children in a health unit area so that preventive services may be more efficiently distributed up to the time of school enrolment.

It is felt that the annual inspection of the children's teeth is of major importance to the success of the program, not only as a guide and reminder to the parents of their children's needs, but also as subtle encouragement to the practising dentists to put forth their best effort knowing their work is constantly observed and appreciated by the Health Unit Dental Officer who could not function without the practitioner's support. This routine observance of the dental work being performed also makes it possible for the Dental Health Officer to maintain an understanding of the practitioner's difficulties and often help overcome them by organizing demonstration courses and study clubs.

The actual entry of a qualified dentist into the classrooms is thought to produce a desirable impression on the minds of the older children especially and to secure their more serious attention to the dental health teachings. This effect is quite comparable to the uniformed policeman talking about safety habits or the fireman teaching how to eliminate fire hazards. For the very young children it is possible that the hygienist being female, is more quickly accepted due to her natural gifts for handling children. In any case the greater professional training of the dentist is not appreciated and is perhaps wasted on the very young children. The first person discussion, in which the chil-

dren participate led by a properly trained and experienced dental health worker, is considered to be more effective than overly routine use of visual-aids or moving pictures which are often more entertaining than informative. To this end it is felt desirable for hygienists (and dentists to a lesser extent), entering the dental public health field to undergo a substantial period of field training to enable them to become experienced in the above and other public relations activities.

Lastly it is observed that carefully maintained statistical records touching on the various aspects of dental health are indispensable to the successful direction of the dental health program. For the type of program which has been described above these were conveniently obtained by recording the conditions of a sample of children selected systematically in the course of the routine dental examinations. There seems to be no difficulty for the dental hygienist to carry on examinations for statistical purposes when proper instruction has been given beforehand. The usual equipment and clerical assistance provided for a dentist is necessary for a hygienist doing comparable work.

CONCLUSIONS AND RECOMMENDATIONS

1. Interest and willingness to accept responsibility for their oral health have been demonstrated by a great increase in the level of voluntary dental care and the apparent application on an individual basis of general caries control measures which is the presumed explanation of the reduction in dental caries attack rates.

2. While it is clear that the overall instruction given to the children has been beneficial it is very important that research be advanced so that the control measures advocated may be as specific and effective as possible.

3. Great difficulty is encountered in reaching the children of the pre-school age or their parents and in face of the obvious early inception of dental disease it is felt that administrative steps should

be taken to ensure the complete and continuous registration of pre-school children with the local board of health so that preventive measures may be made available.

4. The maintenance of an efficient statistical record system has proved essential to the administration and direction of the dental health program and has in addition made possible field studies as an aid to research in new control measures.

5. While the general educational program is not advocated as a substitute for water fluoridation there is evidence that the two would complement each other.

6. The routine annual inspection of the children's teeth with notification of defects sent to parents is considered to be of major importance to the continued high rate of voluntary dental care. This service may be more economically maintained through the use of examination teams each composed of a hygienist and a clerical assistant. Such an arrangement might allow a single public health dentist to effectively operate on a much larger geographical basis and supervise a far greater population.

7. It is felt that the provision of dental care on a community basis for the children of actual Welfare Recipients would alleviate real suffering on the part of this closely definable group who have no means to pay for even incremental dental care. On the other hand there is evidence that for the rest of the population it is more practical for the official health agency to aid the individual through teaching the use of control measures and to encourage early voluntary treatment by private dentists through diagnostic or examination services.

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POLICY STATEMENT ON

The Canadian Dental Association, after years of careful study, makes the following statement of policy relative to any health insurance plan that includes the provision of dental services which may be introduced.

1. The chief objective of the dental profession is to provide the best possible dental service for the people of Canada.
2. To this end the dental profession will cooperate with authorities in the formulation of plans designed to improve dental health.
3. The principle of contributory health insurance is approved, provided that such plan or plans assure the development of both preventive and treatment services of the highest standard and that fairness to both the recipients of the services and to those rendering the services be assured.
4. The patient must have freedom of choice of dentist and the dentist must be free to choose patients. The personal relationship between patient and practitioner is essential to a successful health service.
5. Adequate training facilities of a high calibre are a necessity in order to supply a sufficient number of qualified graduates.
6. In order to sustain standards of practice, provision must be made for post-graduate education at frequent intervals.
7. As an essential part of health service provision must be made in hospitals for dental services.
8. The purpose of licensure to practice dentistry is primarily to protect the public. In the best interest of the patient it necessarily follows that all who desire to practice dentistry should be required to conform to uniformly high standards of preliminary education and the subsequent training must include the basic sciences, technical and clinical subjects.
9. Under a health insurance plan all dental benefits should be made available including preventive, diagnostic and treatment services. Arrangements should be included for specialist and consultative services.
10. Methods of remuneration of dentists and rates of remuneration should be adopted only after agreed upon with representative organizations of the profession. The Canadian Dental Association is of the opinion that remuneration on the basis of fee for service results in a high quality of service.

Administration:

11. Previous to the introduction of health insurance legislation consultations should be held with the representatives of organized dentistry.
12. The administration of health insurance should be on national, provincial and municipal levels by independent, non-political commissions, representative of those providing and receiving the services. Professional details should be determined by committees representative of the profession.
13. All dental appointees to various bodies established under such legislation should be selected only with the approval of the organizations representing the profession.

HEALTH INSURANCE

14. Dental benefits should be introduced in a gradual manner and after careful planning as stated hereunder.

In the opinion of the Canadian Dental Association the following should obtain in order to secure improved dental health.

Health Education:

15. Intensive health education programmes should precede the introduction of, and accompany the rendering of dental treatment service under any plan.

16. Dentists qualified in public health should be employed for direct programmes in dental health education in each area.

17. All departments of health should have active divisions on dental health to implement and where necessary to subsidize preventive measures.

Research:

18. Accelerated activity in dental research is essential if the dental health problem is to be brought under control. Success of any treatment services plan will depend upon reduction of dental diseases. Reduction of dental disease depends upon preventive measures developed through research. From the stand-point of both better dental health and economy, provision for expenditures in research should be a part of plans for dental treatment services.

Treatment Services:

19. Owing to the almost universal need of dental service and the lack in numbers of available personnel the plan should include initially only the younger age groups.

20. Variation exists from area to area as to number of children and number of practitioners which necessitates planning on an area basis. It would be unwise to institute services which could not be provided. From the preventive stand-point, complete services for a younger age group is preferable to partial services for a larger group.

21. The growth of the plan should be determined on an appraisal basis, dependent upon the dental health of those already in the plan, any increase in the number of practitioners and any increase or decrease in the number of children involved.

22. The actual treatment services should be rendered in the private office of the dentist except where not practical. In the opinion of the Canadian Dental Association the best quality of service will be rendered by the dentist in his practice with individual responsibility.

23. Due to the magnitude of the dental health problem any attempt to provide treatment services beyond the capacity of the profession to render, would not result in improvement of dental health. It is the considered opinion of the Canadian Dental Association that the prevention and alleviation of dental disease through the rendering of treatment services for the younger age groups constitutes the only sane approach to the treatment problem.

June 2, 1956

ABSTRACTS

Planning a dental prepayment program for children in an area of low caries prevalence

by WESLEY O. YOUNG, D.M.D., M.P.H., Boise, Idaho, WALTER J. PELTON, D.D.S., M.S.P.H., Washington, D.C.
The Journal of the American Dental Association, July 1956.

The potentialities of a community-wide prepayment program for children appear particularly attractive. Traditionally, in view of the large backlog of dental services needed by the population, the dental profession has looked toward the younger generation with the hope that successful health education activities would make it possible to rear a generation with healthy mouths and an active interest in oral health. Many school systems at present already have excellent educational and treatment programs. The addition of dental prepayment would seem to offer unique possibilities for a complete oral health program.

From an administrative standpoint a prepayment dental program for children has certain obvious advantages. One of the peculiar problems encountered in applying prepayment to dental treatment needs is the chronic and accruing nature of dental disease. In children, this problem is minimal because, even if the enrollments to not start until school age, the children come into the program before they have accrued a large backlog of treatment needs. Furthermore, since children in school are easily accessible for examination it is a relatively simple matter to determine at the outset of the program the case load that may be expected. In an adult program, predeter-

mination of needs and an assessment of the case load are generally extremely difficult or impossible.

It seems probable, moreover, that the problem of obtaining adequate enrollment would be less difficult with children than with adults because parents frequently are willing to do for their children what they are not willing to do for themselves. In addition, the school situation provides opportunities to utilize group pressure through the schools and allied volunteer agencies.

The reduction in premiums made possible by the lower caries attack in a community with fluoridated water would have obvious advantages in organizing a dental prepayment program. The rapid growth of hospital and medical care insurance has shown that people are willing to purchase health care on a prepayment basis if they are able to obtain benefits that they desire at a price which they consider reasonable.

The purchase of health insurance, however, is partly motivated by the fear of large and unpredictable future expense. Because of the chronic and recurring nature of dental diseases, the fear of severe and unpredictable financial loss will not be an important factor in motivating membership. The main advantage that dental prepayment would offer would be

the opportunity to pay for professional care on a regular budget basis. In order to make this factor attractive, it would be necessary to have reasonably low premium rates.

It seems probable that, under favorable circumstances, a considerable number of parents would be willing to pay an annual premium of \$15.00 a year for dental

treatment for their children. Such a premium might be within the reach of most families—even in those families which have more than one child in the age groups covered by the plan. On the other hand, it seems less likely that as many parents could be motivated to purchase prepayment dental health care if the premiums approach \$40.00 a year.

Prevalence of malocclusion in children six to fourteen years of age and treatment in preventable cases

by GEORGE V. NEWMAN, D.D.S., Newark, N.J.

The Journal of the American Dental Association, May 1956.

Malocclusions of the teeth, since they affect a large segment of the population, are a dental public health problem. Consequently, a preventive orthodontic care program has been organized in the Newark Bureau of Health, Dental Division.

Data on the prevalence of preventively and correctively treatable malocclusions in a group of 3,355 children, 6 to 14 years of age, were accumulated and studied, and preventive orthodontic techniques were applied to ascertain the most efficient, rapid and economic methods for treatment. The following observations were made:

1. Normal occlusion was found in 48 per cent of the children examined. Malocclusion was found in 52 per cent of the children.

2. Class I preventable malocclusion was found in 28.14 per cent of the children. Class I correctable malocclusion was found in 10.10 per cent.

3. Class II preventable malocclusion was found in 4.50 per cent of the patients. Class II correctable cases were

4. Class III preventable malocclusion was found in 0.15 per cent of the children and Class III correctable malocclusions totalled 0.33 per cent.

5. Less than 1 per cent of the children examined had been treated or were receiving orthodontic treatment.

6. The statistical difference between boys and girls in the incidence of malocclusion was insignificant.

7. Preventive orthodontic treatment is not complete corrective treatment. Rather it fosters normal oral muscular function and adjustment of facial, skeletal and dental parts, permitting the development of a pleasing facial appearance and thereby preventing the psychologic maladjustment that usually occurs in a child with a handicapping malocclusion.

8. Public health preventive orthodontics furnished children from families in the lower income bracket will tend to diminish the severity and incidence of correctable malocclusion in family units least able to pay for such corrections.

ETHICS

Obligation to patients

Surprising as it may seem to us not all of our patients think of us as absolutely honest, unselfish men. Undoubtedly they would be naive to do so.

This article will deal with some practical applications of the right ethical values in the dentist-patient relationship.

The following may illustrate the situation with regard to what people think of us and the answer.

A patient presented herself to a dentist with a set of dentures made by another dentist complaining that she could not wear them. She was ready and willing to have a new set constructed and expected that that would be the likely course of action. Examination showed the dentures to be well constructed but poorly articulated in the mouth and over extended in the palatal region sufficient to cause gagging. Trimming the posterior periphery in the upper and grinding the dentures in the mouth at two appointments rendered the dentures perfectly satisfactory.

When told that new dentures were not required and she would be wasting her money to have new ones constructed she said, "Pretty good for a dentist". In other words while complimenting the dentist on not taking the opportunity to make an easy fee she betrayed her opinion of dentists in general. The patient also thought better of the dentist who originally made the dentures when she realized that had she been able to go back to him for adjustment the dentures would have been satisfactory. The outcome of this experience was that the patient had her faith in the generally high ethical standards of dentists restored.

As an aid in maintaining good relationships with patients the author has found the following practice very valuable.

Each night the assistant makes out two copies of the next day's appointments. One is placed in its usual position in the office while the other one is put in the dentist's coat pocket and taken home with him. At some time before the next day's work begins a few minutes are taken to go over the list of patients and think of their needs as persons, as well as their dental needs.

As these words are written I realize how little I have thought creatively for these people or cared for them but whenever I have it has brought very positive results into the dentist-patient relationship. For example a man who holds an important position in the life of the country is on the list for the day. He has recently suffered a bereavement in his family. He is known to be very upset. The way this man carries on and does his work has national consequences. He needs more than routine dental treatment. A few minutes careful thought beforehand may equip the dentist to give this man the sympathetic understanding and reassurance he requires and to bolster his faith with some of the dentist's own.

To list and discuss all the rules that have been laid down with respect to the obligations of a dentist to his patients is beyond the scope of this article. The publication, "A Guide to Professional Conduct" issued by the Canadian Dental Association is explicit in this regard. If we abide by the spirit as well as the letter of that Guide, and are prepared to add a generous portion of the constructive caring and sympathy for which mankind cries out, we need have no fear for the future of the relationship between the dental profession and our patients.

EDITORIAL

Health Insurance and the C.D.A.

On July 19, 1955, the Honourable Dewey Short, M.C., a Congressman from the Seventh Missouri District addressed the Post-graduate Medical Assembly of South Texas. He indicated that a programme of free medical care was on the horizon but added that he could think of nothing that would do more to stop the progress of medicine than for the United States to engage in a programme of national socialized medicine. On the other hand he pointed out that the nation was very health conscious and because of the continuing betterment in health and longevity the United States had prospered. He then stated in the following words something which should give all members of the health team—physicians, dentists, nurses, etc. cause for serious contemplation: "But having started this very desirable awareness of the need for proper medical treatment, it is incumbent upon you as private citizens, as advocates of the free enterprise system—yes, as members of a capitalistic team—to meet those demands through the free enterprise system. If that demand is not met by you as private practising physicians, or by you as groups of private practising physicians, then it will be done for you by the Federal Government."

"That is the history of this nation and nothing you or I will do or say will stop it. It is only if you and I fill the needs of the people through the free enterprise system that that system will continue to exist as we know it."

It is difficult to argue with that latter statement.

Canada, too, is a nation which, because of the splendid contributions of her physicians and dentists, has received a great awakening in the need for improved health care. Public Health measures, which only a few short years ago were bitterly opposed, have now been assimilated into the pattern of everyday living. At one time people went to the physicians only when they were sick. Today paediatric services and industrial health programmes have altered the thinking of many of our citizens and they now realize the importance of preventive care and seek the attentions necessary to keep them and their children well.

Our country, too, has prospered, and although her physicians, nurses, and dentists add nothing tangible to the nation's wealth, their ministrations have had a most significant effect upon our Dominion's economy.

With this awakening of interest comes increasing responsibility. The professions cannot close their eyes to the health needs of many people simply because these citizens cannot afford to pay for necessary services in the usual manner. There are homes in this great Dominion to which even relatively small expenses for health care prove a significant hardship. It has been stated, and not without fairly sound evidence, that the greatest cause of poverty and destitution is sickness. One does not have to look too far to find examples of abject poverty arising from catastrophic illness.

What then, about health insurance? It is doubtful if any issue has engendered

such wide diversities of opinion over so many years. Since 1919 Canadians have been talking about health insurance. The three major political parties have included the subject in their platforms and the Federal Government and four of the Provinces have had official commissions or committees to study the question.

Insurance is simply a system in which a person pays an amount of money, called a premium or contribution, into a fund in order to receive from that fund certain specified benefits if he suffers financial loss. This group participation or sharing of the risk, is not incompatible with free enterprise. In fact, it has developed and prospered under our system.

In health insurance the risk is the cost of health care. The benefits are the payment for health services which the insured person finds that he requires and which are covered by the contract. The insurance plan may reimburse the insured person for the bills he incurs (or part of them) by paying him or the person providing the services an indemnity, that is, a cash payment toward the cost.

All mass insurance programmes, life, disability, fire, theft, and comprehensive are based on the principle that a general sharing of risk is inexpensive to the individual so long as there is a large number of participants in the programme who can assume a very minor share of the calamity when it occurs.

Whether or not strict insurance principles can be applied to dental conditions is a question. The Health Insurance Studies Committee of the Canadian Dental Association after assiduous study has the feeling of arriving at a dead end, at least temporarily. The committee recognizes the differences between an insurance programme and pre-paid dental services.

On the other hand, Dr. C. A. Kulp, of the University of Pennsylvania feels that dental health care meets the requirements for an insurable risk, relatively well. It is apparent that further study is indicated and that present experimental plans

underway in the United States merit close observation.

The Canadian Dental Association has given serious study to the issue of Health Insurance since at least 1940. Some members of the Association have given since that time and are continuing to give, at the present moment, serious contemplation to the multifarious facets of health insurance. The sum total of time expended by these members would be in the thousands of hours.

A reasonably comprehensive statement of policy on health insurance was developed early in the forties and as a tribute to clear and concise thinking most of these principles are applicable today. However, times do change and situations alter and so the Health Insurance Studies Committee felt it incumbent upon the Association to enunciate a statement in accord with present conditions. This policy statement was adopted at the Annual Meeting of the Board of Governors on June 2nd of this year. This statement appears elsewhere in this issue and it is doubtful if a more important document has ever been released by the Canadian Dental Association. Into this statement have gone the accumulated knowledge and experiences of a profession whose prime concern is dental health care in its many and varied aspects. We recommend a close perusal of the contents.

It is often a peculiarity of contemporary life that those with little or no knowledge of a subject feel deigned to make extensive comments upon or give opinions about matters beyond their sphere of competence. We may hope that persons in governmental positions charged with the responsibility of developing health insurance programmes will give heed to the recommendations of the dental profession, and realize that this Association has by its demonstrated actions proven that while it serves the dentists of Canada, it recognizes as a greater obligation, its service to the Canadian people.

The Association

*International Congress in Rome,
Sept. 7-14, 1957*

The following points should be noted particularly by those intending to attend the Congress:

1. Accommodation for the Congress will be at a premium. Reservations are being held for members of the C.D.A. and can be procured now. Applications should be made immediately in order to assure accommodation.

2. Arrangements have been made with Thos. Cook & Son in order to provide travel and hotel accommodation for C.D.A. members. A considerable number of dentists from all across Canada have signed up for the trip. Full information may be secured by writing: Thos. Cook & Son, 97 Adelaide St. West, Toronto, or inquiry may be made at the office of this firm in your locality, if available.

3. F.D.I. Supporting Members of two years' standing (1956 & 1957) will register for the Congress at one-half the fee assessed others attending. The Supporting Membership fee is \$10 a year. The payment of this fee for this year and next year amounts to approximately the same amount as the difference in the registration fee. However, in becoming a Supporting Member now you will receive the F.D.I. Journal in which will be printed the presentations to be made at the Congress and other information related thereto. This fee should be submitted to: Don W. Gullett, F.D.I. National Treasurer, 234 St. George Street, Toronto.

Insurability of Dental Health Care

During recent years a great deal of discussion has occurred on the point whether or not dental health care qualifies as insurable. Last month at the 7th National Dental Health Conference in Chicago, C. A. Kulp, Ph. D., dean of the Wharton Road School of Finance & Commerce of the University of Pennsylvania, stated that dental health care meets the requirements for an insurable risk relatively well. There are some obstacles which must be overcome and they can be through experience and the development of statistics, he told the Conference. "You never have statistics ready-made when you set out to create an insurance

plan," he said. "Statistics just don't exist for insurance purposes. You have to insure first and then get statistics."

Centennial Mid-Continent Dental Congress

The St. Louis Dental Society will commemorate its 100th anniversary November 25, 26, 27 and 28th, 1956. An outstanding and entertaining programme is planned. The St. Louis Society is said to be the oldest local society in existence. Inquiries should be addressed to the Secretary: Dr. Val. H. Frederick, 8013 Maryland Avenue, Saint Louis, 5, Missouri, U.S.A.

Dentifrices in Fruit Flavors

According to the Financial Post fruit flavoured dentifrices have been tested out with the public in England, and found to be very popular. The druggists are worried because this means dentifrices in all flavours resulting in them having to carry 12 times the stock.

Income Tax on Accounts Receivable

It has been our experience that a large number of persons whose income is on a fee basis—doctors, dentists, lawyers, accountants, architects, etc.,—are not aware of the fact that, under certain circumstances, amounts owing to them become subject to income tax at the time of death. As an example, take a doctor's book accounts; a doctor usually pays income tax on fees actually collected by him, but at the same time his records probably reflect many hundreds of dollars owing to him. These book accounts, less a reasonable allowance for those which may be uncollectable, become taxable income when the doctor dies. It is not difficult to imagine the large tax liability that would then result in certain instances.

"It is sometimes possible to reduce the tax liability. If a named beneficiary is given the accounts by Will, such benefi-

ary rather than the estate becomes responsible for the tax in the year in which the accounts are collected. Accordingly, where it is likely that the accounts will be collected over a number of years and the beneficiary is in a comparatively low income tax bracket, this plan has much to recommend it. However, in other cases it may be extremely costly. We recall one gentleman whose wife had a substantial private income of her own. His Will provided that she should have the book accounts of his practice. When the bulk of these accounts were collected almost immediately after his death and added to her own income, augmented by other income from the estate, the increase in her income tax was greatly in excess of the amount that would have been paid by the estate had the accounts remained a part of it.

"If the accounts are not given by Will to a named beneficiary, three methods of calculating the tax payable are available to an executor. The accounts may simply be added to the deceased's other income of the year up to the date of death, or the executor may file a separate tax return, claiming all exemptions, as if such accounts were the deceased's only income for the year. The third method allows the executor to divide the total of the accounts into five equal portions, add one portion to the income of each of the four years prior to the year of death and recalculate the tax. The remaining portion

is added to the other income of the year of death. The method chosen will, naturally, be that which results in the least amount of tax being paid.

We recommend that professional people having book accounts of the same nature as those under discussion give careful consideration to all tax implications before deciding whether such accounts should be given to a beneficiary by Will or retained as part of the estate."

(The above statement was issued as a bulletin of the Canada Trust Company)

Brief Items

Dr. H. I. Whittaker of Edmonton, Past President of the Canadian Dental Association (elected 1920) died on June 20th.

Dr. Albert Joackim of Brussels, Belgium was re-elected president of the Federation Dentaire Internationale at its 44th annual meeting held May 28th to June 3 in Zurich, Switzerland.

Dr. Harold Hillenbrand, Secretary American Dental Association, (Honorary Member Canadian Dental Association), who is one of the six honorary vice-presidents of the F.D.I. was named chairman of a committee to revise the by-laws and re-elected to the finance committee at the recent Zurich meeting.

The American Dental Association will celebrate its centennial by holding the One Hundred Annual Session in New York Sept. 21-24, 1959.

The Corps

Three successful summer camps were held this year by the R.C.D.C. Militia. Units from Eastern Canada trained at Camp Utopia, N.B., during the period July 15 to 21st. The four units participating with their commanding officers were: No. 50, Halifax, N.S., Lt.-Col. F. C. Fennell; No. 51, Saint John N.B., Lt.-Col. D. T. Wilson; No. 52, Quebec, P.Q., Lt.-Col. J. B. Lachance and No. 53, Montreal, P.Q., Lt.-Col. C. Asselin.

Colonel J. F. Edgecombe, Fredericton, N.B., Colonel L. E. Kent, Lachine, P.Q., and Lt.-Col. J. E. Merritt, Halifax, N.S. of the Militia Advisory Staff and Lt.-Col. D. W. Henry former commanding officer of No. 53 Unit aided in camp administration.

Three units from Ontario trained at Niagara-on-the-Lake during the last week in June. No. 54, Ottawa, Lt.-Col. C. E. Woods, C.O., No. 55, London, Lt.-Col. R. L. Clayton,



Lt. Col. C. E. Woods, Commanding Officer, No. 54 Dental Unit, C.A. (M), receives the Command Dental Officers Trophy from Lt. Col. J. MacGowan at Central Command Summer Camp, Niagara-on-the-Lake. This trophy is presented annually for the most efficient Dental Unit at Summer Camp. No. 54 Dental Unit, with Headquarters in Ottawa, has now won the trophy for the third successive year. This unit also won the Ash Temple Trophy for inter-unit sports competition at Summer Camp.

C.O., and No. 56, Toronto, Lt.-Col. N. L. Simon, C.O., Lt.-Col. H. R. McLaren of the Militia Advisory Staff and Lt.-Col. G. K. Clarke former C.O. No. 54 Dental Unit assisted.

Western Canada dental units trained at Camp Wainwright, Alberta, during the first week of July. All five units were represented: No. 57, Winnipeg, Man., Lt.-Col. W. G. Campbell, C.O.; No. 58, Saskatoon, Sask., Lt.-Col. P. Rabatich, C.O.; No. 59, Calgary, Alta., Lt.-Col. C. M. Johnson, C.O.; No. 60, Edmonton, Alta., Lt.-Col. G. E. Decker, C.O., and No. 61, Vancouver, B.C. Colonel J. P. Whyte, Swift Current, Sask., and Colonel C. S. Lea, Calgary, Alta., were the Militia Advisory Staff.

The R.C.D.C. (Regular) assisted in camp administration and training. Lt.-Col. T. L. Marsh was the D.G.D.S. representative at all camps. Lt.-Col. H. L. Harris of Halifax at Camp Utopia, Lt.-Col. J. A. MacGowan of Ottawa at Camp Niagara and Colonel G. B. Shillington of Edmonton at Camp Wainwright.

In addition, an increasing number of dental militia personnel trained with other components of the Army, the Navy or the Air Force. The Canadian Women's Army Corps element of the Militia Dental Units were at special C.W.A.C. Camps.

Brigadier E. M. Wansbrough was elected President of the Armed Forces Dental Service Commission of the Federation Dentaire Internationale at the Zurich Congress in June 1956.

Major J. G. Butler has returned to Canada following a tour of duty in Korea and has been posted to Trenton, Ont. He has been replaced by Capt. L. Dombowsky.

Major R. B. Jackson, Capt. J.C.E. McDonald and Capt. E. F. Shaunessy have recently returned from duty with the R.C.A.F. in Europe. Their new locations are Ottawa; Gimli, Manitoba and Aylmer, Ontario, respectively. Major W. R. Thompson, Capt. R. J. Bryant and Capt. C. R. Pugh have replaced these officers in Europe.

The Library

The Library of the Association consists of practically all the books related to dentistry which have been published during the last ten years. A considerable number of volumes published earlier are also available.

The Library has been made possible through the generosity of interested members of the Association. All monies received are used for the purchase of books. The Association bears the cost of administration.

For the benefit of members and all others interested, the library is open daily from 9.00 a.m. to 5.00 p.m. except Saturdays and Sundays. All dental periodicals are available.

Books may be borrowed by the membership by writing: Librarian, Canadian Dental Association, 234 St. George St., Toronto.

Additions

ARPA INTERNATIONALE: Les parodontopathies. Rapports et communications du XIVe Congrès de l'Association pour les Recherches sur les Parodontopathies. Venezia 5-11 septembre 1955. 386 p. illus.

ARSTAD, T.: The capsular ligaments of the temporomandibular joint and retrusion facets of the dentition in relationship to mandibular movements. 1954. 95 p. illus.

DORCUS, R. M.: Hypnosis and its therapeutic applications. 1956. 313 p. 17 tables.

GINN, J. T.: Review of dentistry; questions and answers. 2nd ed. 1956. 997 p.

KAZIS, H. — KAZIS, A. J.: Complete mouth rehabilitation through crown and bridge prosthodontics. 1956. 392 p. illus.

McGEHEE, W. H. O. — TRUE, H. A. — INSKIPP, E. F.: A textbook of operative dentistry. 4th ed. 1956. 720 p. illus.

NORTH, R. L. — MCGILL, O.: Dental hypnosis. 1952. 21 p.

ROWAT, H.: This won't hurt a bit; the musings and memories of a dental surgeon. 1956. 141 p.

SHARP, G. S. — BULLOCK, W. K. — HAZLET, J. W.: Oral cancer and tumors of the jaws; a guide for the diagnosis of oral cancer and benign tumors. 1956. 561 p. illus.

STROMGREN, H. L.: Index of dental and adjacent topics in medical and surgical works before 1880. 1955. 255 p.

Book Reviews

This Won't Hurt A Bit. By—Haddon Rowat, F.D.S., R.C.S.: Published by John Wright & Sons Ltd. Pages: 141 Price: \$1.70 Approx.

This is an interesting and well written book about the vicissitudes of the dental profession from the turn of the century to the present day. Chapters one and two describing the bad and the good old days before the first World War will bring back nostalgic memories of foot dental engines and red plush operating chairs to the senior practitioner.

The author covers a wide range of subjects including state dentistry, drug addiction, ethics

and preventive dentistry, and enlivens the text with personal anecdotes and reminiscences.

Although dealing primarily with the profession in England the author makes it clear that the basic problems of public ignorance, political expediency and confusion caused by commercial interests are common to both sides of the Atlantic and his views on solving them make provocative reading for the Canadian dentist.

"This Won't Hurt a Bit" contains much sound philosophy presented in a humorous vein and can be recommended as an addition to one's dental library.

E. J. Cloke

Color Atlas of Oral Pathology. Prepared under the auspices of The U.S. Naval Dental School, Bethesda, Maryland. Published by: J. B. Lippincott Co. 1956. Pages: 188, Price: \$12.00.

The purpose of this book is to present in concise form the fundamental facts concerning oral disease. The book is an atlas containing 461 color plates depicting the clinical, roentgenographic and microscopic appearance of oral lesions. It is a visual presentation arranged so that three color plates occupy one half of each page and a concise commentary occupies the other half. This commentary includes a definition of each entity and as much other pertinent information as space will allow. Where a systemic disease is under consideration the general as well as the oral aspects are discussed.

The book is designed primarily for the general practitioner to help him in "arriving at a diagnosis so that treatment can be planned intelligently." As an aid to diagnosis, the clinical

color plates are excellent, but the commentary is too brief in many instances. The scope of the book is exceptionally broad. Histology and Embryology, Developmental Disturbances, Diseases of the Teeth and Supporting Structures, Diseases of the Oral Mucosa and Jaws, and Neoplasms are the main sub-divisions. A high percentage of the pathological conditions encountered by the general practitioner will be found to be included, even dental caries.

Perhaps the greatest value of the book is the emphasis it places on the microscopic picture of disease. The reader cannot fail to understand disease processes more clearly after studying the photomicrographs of both normal and diseased oral tissue. Here is a complete laboratory course in oral Histopathology.

The book is a delight to both mind and eye and is enthusiastically recommended for dental students and for the general practitioner for whom it was designed.

K. A. McMurchy

Committees and Councils

Specialists and Specialization

As the first effort to secure uniformity among the various Provinces regarding Specialization your Committee made a survey in the form of a questionnaire to determine what differences existed.

It was found that only three Provinces (Quebec, Ontario and Alberta) had laws which provided for certification of Specialists. Of the remainder of the Provinces heard from, three reported that they had dentists who were confining their practices to a certain branch of dentistry.

In the Provinces which certified specialists as well as those which had dentists confining their practice to certain fields, the specialties of Oral Surgery and Or-

thodontics were the only consistent ones.

Other Specialists which were recognized included:

- Oral Diagnosis
- Paedodontics
- Periodontics
- Prosthodontics
- Restorative Dentistry.

It is obvious that an effort to secure more uniformity is greatly needed and it will be the endeavour of the Committee to work in that direction.

A. Gerald Racey,
Chairman.

The Provinces

Nova Scotia

Dr. D. C. Eaton of Halifax was elected president of the **Nova Scotia Dental Association** at their three-day Maritime convention concluded at Dalhousie University June 29th. Dr. Eaton succeeds Dr. L. J. Archibald, also of Halifax.

Other officers are Dr. M. Claener, Sydney, first vice-president; Dr. A. E. Ervin, Dartmouth, second vice-president; Dr. W. H. Macneil, Halifax, executive member; and Dr. A. B. Haverstock, Halifax, secretary.

The three representatives elected to the Provincial Board are Dr. D. C. Eaton, Dr. Richard Taylor, Wolfville, and Dr. Len Israel, Sydney.

Canadian Dental Association representatives are Dr. G. M. Lewis, Halifax, and Dr. L. J. Archibald, Halifax.

Ontario

Dr. John C. Derbyshire, of Smiths Falls, was elected president of the **Rideau Lakes District Dental Society** at an organizational meeting held in the Legion House in Smiths Falls.

Vice-President is Dr. B. W. Pickering of Almonte and Dr. H. G. Lightford, of Perth, is secretary-treasurer.

Assistance in the organization plans was given by Dr. E. E. Johns, of Kingston, district governor for the Ontario Dental Association with which the new group becomes affiliated.

The society is intended to act as an agency to familiarize its members with the latest developments in dental science.

The meeting was attended by 14 dentists from eight communities within the district.

The following members of the **Inter-County Dental Society** were recently elected to positions on the executive: President, Dr. Ralph Hunt; Vice-President, Dr. Harry Bobbie; Secretary, Dr. Lorne Hemmerich; Treasurer, Dr. Ralph Mitchell.

The annual meeting of the **Dental Laboratories Association of Ontario**, held in the Royal York Hotel on May 12th and 13th started off, as usual, with the Reception.

The convention officially opened at 8.30 a.m. Saturday morning, May 12th, 1956 when Executive members met at a breakfast meeting. The purpose of this meeting was to wind up any last minute details per-

taining to the convention, and to consider the matter of nominations for the Governing Board.

Saturday afternoon, a clinic was put on by Mr. John Luft, a technician from New York City, and the reports from the members who attended were most enthusiastic.

The cocktail party and annual banquet were held Saturday evening, May 12th, and were conducted very smoothly by the President, Mr. Charles Goodall. A presentation of a desk set was made to Mr. Goodall on his retirement and presentations were also made to Mr. Stan Hosken and Mr. J. R. Price, who were retiring from the Executive.

Sunday morning, the clinic was conducted by Mr. Gus L. Anderson of The Dentists' Supply Co. of New York, and was extremely well attended. The subject matter was excellent, as evidenced by the fact that all delegates remained to the end of the clinic and gave an enthusiastic ovation to Mr. Anderson.

Sunday afternoon, the annual business meeting of the Association was held, when the new President, Mr. H. Posen, was installed as chairman of the meeting.

Other officers elected were: Immediate Past President, Mr. C. R. Goodall, Toronto; Vice President, Mr. K. M. Daly, Toronto; Secretary, Mr. N. C. Thomas, North Bay; Treasurer, Mr. W. J. Clayton, Toronto.

Quebec

An enthusiastic gathering of close to 40 members of the **Montreal Dental Club** took advantage of Knowlton Golf Club's hospitality on the week-end of June 9th.

The week-end itself was an outstanding success characterized by a spirit of friendship and joie de vivre in such a pleasant and relaxing atmosphere.

Perennial winner Roy Dohn took low gross honors with Robert Harvey a close second. Walter Swiston won the low net prize and Albert Schutz second low net. George Dundass copped the monkey golf two hole tournament and Leonard Kent Jr. the putting competition.

A special thanks to Roy Dohn for arranging such a pleasant week-end.

A. J. S.

Saskatchewan

Plans for the forthcoming convention of the **Saskatchewan Dental Association** at Waskesiu, August 30 to September 1 are all arranged.

Two clinicians on the program are out-

standing men in their specialties namely, Dr. George Brass who practises in Edmonton and is on the operative staff of the Dental School, and Dr. Joseph Freeman, an Oral Surgeon in the city of Winnipeg.

Among many items of business will be the question of the Post Payment Plan. Considerable discussion is expected in this subject.

A fish Derby and a golf tournament have been arranged. A large attendance is expected.

Dr. E. Lappa who has practised in Saskatoon since graduating from the Alberta Dental College in 1948 recently moved to Sudbury, Ontario. The members of the local society regret the loss of his valuable membership.

Dr. Louis Epstein who has been practising in Kelvington, just moved to the city of Saskatoon. The Society extends a sincere welcome to him.

L. D. H.

The following officers have been elected to the Saskatchewan Dental Society:

President Dr. H. H. Cowburn
Vice-President Dr. K. Epstein
Sec. Treas. .. Dr. M. G. G. Halliday

British Columbia

The fee survey conducted by the **B.C. Dental Association** received a 60% response, twice the average considered good for a mail questionnaire. It was decided to tabulate returns and send to the men practising in the province a compilation of the average returns of each district as well as the average fees for the province.

Because of the success of the recent B.C. meeting, future convention chairmen were recommended to continue the commercial exhibits and also program advertising, in order to maintain a continuity in these matters. It was also felt advisable to clear in advance the passage through the Canadian Customs of U.S. clinicians' equipment, to avoid much waiting and inconvenience.

A resolution was passed to inaugurate a Ladies' Auxiliary to the B.C. Dental Association with local chapters in Vancouver, Victoria and other centres that might be interested.

To curtail red tape at the annual business meeting of the association (and to assure an adequate attendance), reports of committees are published one month in advance in the News Bulletin. This gives everyone a chance

to peruse the reports beforehand and come prepared to discuss them. The lengthy minutes of the previous annual meeting are left to the executive for consideration.

The **Fraser Valley Dental Society** at its June meeting elected these men to office:

President: Dr. A. D. MacPherson, White Rock.

Secretary: Dr. A. J. Vizzutti, White Rock.

Directors: Dr. A. A. Miller, Abbotsford; Dr. D. D. Vogt, Chilliwack; Dr. G. R. Young, Whalley; Dr. C. W. B. McPhail, Haney.
D. H. M.

The final meeting of the 1955-56 year for the **Fraser Valley Dental Society** was held at the home of Dr. W. G. Newby in Sardis on Sunday, July 15. This meeting took the form of a social gathering for the members, their wives and families. The weather was lovely, the water in the swimming pool was delightful, and Dr. Newby's string of horses were obligingly frisky for the enthused visitors.

A short and unusual business meeting took place with the members perched on the rails of the corral, just outside the barn door. The nominating committee presented the following slate of officers for the coming year, and all were elected:

President: Dr. A. D. MacPherson, White Rock.

Secretary-Treasurer: Dr. A. J. Vizzutti, White Rock.

Directors: Dr. A. A. Miller, Abbotsford; Dr. D. D. Vogt, Chilliwack; Dr. G. R. Young, Whalley; Dr. C. W. B. McPhail, Haney.
D. H. M.

Manitoba

First step toward fluoridation of Greater Winnipeg's drinking water was taken recently when tenders were called for the supply of chemical feeding equipment.

The Greater Winnipeg Water District has also gone through the formality of gaining approval of the provincial health department for the type of equipment to be used.

General manager N. S. Bubbis says the metropolitan area's drinking water should be fluoridated by October or November.

Fluorides are to be injected at the water supply source at Shoal Lake.

General News

The Annual Meeting of the **National Dental Examining Board** was held in the Chateau Laurier, Ottawa, June 29th, 1956. Present were Provincial Representatives, Doctors R. J. Godfrey, Ontario; H. R. MacLean, Alberta; Hugh Eaton, Nova Scotia; A. G. Racey, Quebec; Joseph B. Rumberg, Manitoba; J. F. Edgcombe, New Brunswick; Reginald W. Ball, Newfoundland; Heath McIntyre, Prince Edward Island; W. F. Hancock, Saskatchewan; J. R. Ingle-dew, British Columbia; Doctors R. G. Ellis and J. A. Fortier representing Council on Dental Education of C.D.A. and Dr. Harold N. Beach, Registrar-Secretary, Ottawa. Dr. R. J. Godfrey, the President, presided.

The Board attended to the business involved in conducting the National Dental Examining Board and reviewed the results of the June 1956 examinations. The Committee of Examiners reported as follows:

Total number of candidates, 67.	
Passed in all subjects at average of 65% or better	52
Eligible to write supplementals	10
Failures	5
Total	67

The following candidates were successful in the examinations and were granted certificates of the National Dental Examining Board:

Kenneth Lyman Stensrud; Walter Wathen Anglin; Douglas Ian Bayne; William McCurdy Murphy; Stanley Holick; Glendon Lewis Rogers; Samuel Newman; Doris Rosalind Marshall; Norman Joseph Layton; Albert Vachon; Elmer Stanislaus Morrison; Raymond Vere Winsor; Albert Bruce Cooper; Arthur Gordon Kluzak; John Roderick Fraser; Joseph Royden Trainor; Bohdan L. Kuzyk; Gerald Seniw; William Lambert Van Alstyne; Benjamin Francis Turner; John Herbert Mansfield Snedden; William Douglas McGinnis; James Joseph Nelson Wright; David Engel; John Carl Zaporinuk; Osher Chaikin; Calvin John Edwardh; Russell Theodore Grenkow; Joseph Slogam; George Steve Zimbalatti; Frank E. Shamy; Donald Joseph Cherry; Thomas Wayne Dunphy; Gordon James Hutton; Robert Murray Werry; Randolph Edwin Young; Bernard Sliwovitch; Bernard Harold Riley; Takeo Hayashi; Albert Reinstein; Ronald Edward Donnelly; Atsushi Nabata; Robert Gordon Balderson; Archibald Parker Menzies; Henry Husolo; Donald John Beauprie; Murray Norman Brown; Clyde Sidney Whitman; George James Collins; James Zygmunt Gajda; Arnold Lloyd Smith; Anthony Alfred Taylor.

It was decided to hold the Fall examinations for supplementals on Monday, November 12th, Operative Dentistry, Oral Surgery, Anaesthesia and Pathology; Tuesday, November 13th, Prosthodontics, Ethics, Jurisprudence and Practice Management; Wednesday, November 14th, Preventive Dentistry and Oral Medicine.

The 1957 examinations will be held Monday, Tuesday and Wednesday, June 3rd, 4th and 5th, with Orals on Thursday, June 6th, 1957.

Applications may be made to the Secretary, Dr. Harold N. Beach, 150 Metcalfe Street, Ottawa, Ontario.

Prospective candidates are reminded that the Fall examinations are considered to be special examinations and are for the convenience of those who have supplementals or through extenuating circumstances such as illness or conflicting graduation and NDEB examination dates are unable to sit for the Annual Spring Examinations.

Commencing January 1st, 1957, candidates desiring to take examinations for the first time at the time of the special Fall examinations, must petition the Board through the Secretary not later than June 15th, together with reasons therefor. Such petition will be acted upon by the Board at their Annual Meeting. This Annual Meeting usually takes place about the end of June. An additional fee of \$25 will be assessed for the granting of such requests.

Fluoridation of public water supplies was begun July 2 in Cleveland, serving 1,200,000 residents of the city and 60 suburbs. Initiation of the program in the Ohio city brings to 25,563,927 the number of people now included in the program in the United States. Cleveland is the nation's fourth largest city to have fluoridation, being exceeded only by Chicago, Philadelphia and Baltimore. The start of the Cleveland program climaxes efforts of the Ohio State Dental Association and the Cleveland Dental Society whose fluoridation committee has been headed by Dr. Ralph E. Creig. Total cost of the fluoridation equipment, installed at the city's three pumping stations, was \$116,000 and the annual cost for maintaining the program has been estimated at \$250,000 or about 20 cents per capita. Fluoridation has been under consideration in Cleveland for more than five years. The measure was approved by the city council in 1951 and was challenged through the courts up to the U.S. Supreme Court which last May dismissed an appeal from an Ohio Supreme Court decision. The state high court ruled that fluoridation "constitutes neither an infringement of the constitutional liberties of the citizens" nor the illegal practice of medicine. With the Greater Cleveland program, there are now 1,232 U.S. communities served by fluoridation.

In Memoriam

Matthew Francis Ronan — Dr. Matthew Francis Ronan of Antigonish, Nova Scotia, passed away on July 2, 1956 at the age of 79 years.

Son of the late Thomas and Mary Ronan, he was born in Antigonish. After attending the local public schools and St. F. X. University, he pursued further professional studies at the University of Pennsylvania. Following graduation in dental surgery, Dr. Ronan in 1903 began a practice in Antigonish which was to extend over 50 years. The Nova Scotia Dental Association elected him president for the 1918-1919 term.

For a number of years, he was actively associated with the Canadian militia. He joined the 18th Battery, 3rd Brigade, Canadian Field Artillery, as a lieutenant in 1907, obtained his captaincy and became battery commander in 1910, advancing to the rank of major in 1911. From 1921 to 1925 he was Officer Commanding 86th Battery, C.F.A., Antigonish, and then as lieutenant colonel, he commanded the 16th Brigade C.F.A. from 1925 to 1929.

A member for 50 years of St. Ninian's Council of the Knights of Columbus, he and a number of other charter members were honored earlier this year by the Council and visiting knights.

Surviving Dr. Ronan are his wife, the former Mary Elizabeth Graham, his son, Dr. Graham Ronan, Fort Covington, N.Y., and two daughters, Mrs. F. B. MacDonald, Sydney, N.S., and Dr. A. K. Ronan, Vancouver, B.C. A son, John J., was killed in World War II.

John A. MacDonald — Dr. John A. MacDonald of Montreal passed away on June 27, 1956 at the age of 42 years.

Born in Halifax, Nova Scotia, Dr. MacDonald came to Montreal in 1931. He obtained his Bachelor of Arts degree from Loyola College in 1936 and his D.D.S. from the University of Montreal in 1940.

He was an active member and past officer of the Montreal Dental Club, and was also a past officer of the Loyola Alumni Association and the Junior Board of Trade Ski Club.

Dr. MacDonald also held memberships in the Montreal Badminton and Squash Club, the Summerlea Golf and Country Club, and the Montreal chapter of the Knights of Columbus.

He served overseas during the Second World War in the Canadian Dental Corps from 1941 to 1945, attached to the R.C.A.F. with the rank of captain.

Following his discharge, he established an office in Montreal and had practised there

since then. Dr. MacDonald was a member of St. Malachy's Parish, Hampstead.

He is survived by a brother, Joseph C. MacDonald, of Montreal.

John Scott Girvin — Dr. John Scott Girvin passed away at his home in Ottawa on July 23, 1956, after a lengthy illness. Dr. Girvin was born at Richmond, Ontario, and received his education from local school and graduated in dentistry from the University of Toronto in 1914. He enlisted in the Dental Corps in 1915 and served in England and France until the end of the First World War.

Dr. Girvin specialized in periodontia and practised in Ottawa. He was a member of the Ottawa, Eastern Ontario and Ontario Dental Associations.

Surviving Dr. Girvin are his wife, the former Jessie Mair of Kingston, one son, David and one daughter, Elizabeth Ann, both at home, and a brother, Dr. Patterson Girvin, of Detroit.

George Albert Grant — Dr. George Albert Grant, of Winnipeg, Manitoba, passed away on July 21, at the age of 73.

He graduated from the Chicago College of Dental Surgery in 1915 and was a practising dental surgeon in Winnipeg for 41 years. He was a member of the Manitoba Dental Association and Assiniboine Masonic Lodge No. 114.

His wife Alberta died in 1952. Surviving are a son, George M., a daughter, Mrs. D. Bond, a sister, Mrs. J. M. Carruthers and four grandchildren.

Stanley W. Spicer — Dr. Stanley W. Spicer of Kentville, Nova Scotia, died suddenly at his home on July 27th.

Born in Spencer's Island, he was a son of the late Captain and Mrs. George D. Spicer. He received his Bachelor of Science degree from Mount Allison University and Doctor of Dental Surgery from the University of Pennsylvania.

He practised in Amherst, New York and Canning from 1921 to 1929 and had been in Kentville since 1929.

Dr. Spicer was a member of the Kentville United Church.

Surviving are his wife, the former Irene Thompson, RN, one daughter, Miss Margaret Spicer, Halifax; and three sons, Whitney, Brooklyn, Hants county; Stanley, Fredericton, director of physical education for the province of New Brunswick, and Eugene, Kensington, P.E.I.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1957	Winnipeg, Manitoba	June 23rd-26th
1958	Montreal, Quebec	Oct. 5th-8th
1959	Ottawa, Ontario	
1960	Halifax, Nova Scotia	

FUTURE EVENTS

Date	Function	Location	Officer	Address
Sept. 23-25	E.O.D.A. Convention	Ottawa, Ont.	Dr. A. C. Stinson	202 Laurier Ave. Ottawa, Ont.
Oct. 17-18-19	Montreal Dental Club Annual Fall Clinic	Montreal, P.Q.	Dr. Bruce Ward	1414 Drummond St. Montreal, P.Q.
Nov. 23	Faculty Day Dental Alumni Alumni Assoc.	Toronto, Ont.	Dr. R. Moore	2 Grenview Blvd. Toronto, Ont.
Dec. 2, 1956	A.A.D.M. Mid Annual Meeting	New York, N.Y.	Dr. A. Reiner	114-01—201st Street, St. Albans 12, N.Y.
Dec. 3-7	Greater New York Dental Meeting	New York, N.Y.	Dr. R. E. Morse	Room 106A, Hotel Statler, New York, N.Y.
Feb. 21, 1957	Dental Workshop Conference	Royal York Hotel, Toronto, Ont.	Dr. F. H. Compton	City Hall, Toronto, Ont.
Sept. 7-14 1957	Congrès de la Fédération Dentaire Internationale	Rome, Italy	G. H. Leatherman,	Secretary, London, England

SHORT GRADUATE COURSES

Tufts School of Dental Medicine announces the following courses:

- A Participation Course in Periodontics
Ten Mondays beginning October 8, 1956
- Participation Course in Periodontology
October 8 through October 12, 1956.
- Minor Oral Surgery
October 17 to December 5, 1956.
- Clinical Dentistry for Children
October 19 to November 23, 1956.

For further information contact: Dr. Irving Glickman, Director, Division of Post-Graduate Studies, 136 Harrison Ave., Boston, Mass.

New York University announces the following courses:

These courses are designed for comprehensive preparation in Periodontia and Oral Medicine and are of particular significance for certification towards specialization.

- | | |
|---------------------|--|
| Feb. 27/57—May 8/57 | Refresher course in Periodontia and Oral Medicine |
| Apr. /57—four weeks | Periodontia and Oral Medicine in the Spanish Language. |

For further information: Secretary, Postgraduate Division, New York University, College of Dentistry, 209 East 23rd Street, New York 10, N.Y.

Temple University School of Dentistry announces a two weeks course in Advanced Orthodontics beginning January 20, 1957.

Postgraduate Courses at Temple University

- | | |
|----------|---|
| Course 1 | Periodontics
Dr. Jacoby Rothner and associates
November 5 to November 17 inclusive. |
| Course 2 | Full Denture Prosthesis
Dr. Bernard Jankelson
November 26 to November 30 inclusive. |
| Course 3 | Occlusion and What to Do About It.
Dr. Bernard Jankelson
December 3 to December 6 inclusive |
| Course 4 | Advanced Orthodontics
Dr. Robert H. W. Strang
January 20 to February 2 inclusive. |
| Course 5 | Practice Administration
Dr. Jay H. Eshleman
January 30 to February 1 inclusive. |
| Course 6 | Periodontal Prosthesis
Dr. Morton Amsterdam and Dr. Walter Cohen
February 11 to February 16 inclusive. |
| Course 7 | Orthodontics in Periodontal Therapy
Dr. Jack Alloy and Dr. Maxwell Fogelman
April 11 to April 13 inclusive. |

For additional information write to: Dr. Louis Herman, Postgraduate Division, Temple University School of Dentistry, 3223 North Broad Street, Philadelphia 40, Pennsylvania.

The University of Toronto, Faculty of Dentistry announces the following courses:

- Oct. 18-19, 1956 Periodontics
- Nov. 5-9, 1956 Radiodontics
- Dec. 3-7, 1956 Endodontics
- Mar. 11-15, 1957 Orthodontics
- Apr. 29-May 3, 1957 Dental Oral Surgery & Anaesthesia

For further information: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College St., Toronto 2-B, Ont.

Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

L'aspect endocrinologique de la pratique de la chirurgie dentaire⁽¹⁾

par JEAN-PAUL LUSSIER, D.D.S., M.S., Laboratoire de Physiologie, Faculté de Médecine, Université de Montréal.

Quand on consulte un manuel de physiologie au chapitre de l'endocrinologie, l'impression première qui en résulte est que les troubles endocriniens aboutissent nécessairement à des manifestations spectaculaires comme on le constate dans les syndromes de Hutchinson-Gilford ou de Von Recklinghausen, dans l'hermaphroditisme, le virilisme ou la macrogénitosomie précoce. La pratique de l'endocrinologie ne consiste pas à cataloguer des syndromes, à faire des collections de photographies de cas tout aussi déprimants les uns que les autres et à repêcher son matériel dans les "side show" des cirques où l'on est sûr de rencontrer, au moins un mari nain et sa femme géante, la femme à barbe et l'enfant aux six doigts par main. La pratique de l'endocrinologie est heureusement autre que nos

premiers contacts avec cette discipline nous le laissent entendre. Elle consiste à découvrir les anomalies fonctionnelles des endocrines par des signes cliniques autant que par des tests de laboratoire et à corriger ces anomalies par une thérapeutique appropriée.

Que les maladies endocriniennes ne soient pas les plus fréquentes, remercions en le ciel, car en général ce sont des maladies graves, insidieuses qui parfois prennent plusieurs mois ou plusieurs années à se manifester véritablement. Surtout quand on reconnaît la présence d'une dégénérescence glandulaire, le mal est trop avancé pour que les seules thérapeutiques vraiment efficaces, soient simples et commodés. L'état général peut être alors dangereusement hypothéqué, ce qui incite à des ménagements qui restreignent le choix des interventions. On peut faire les mêmes remarques au sujet des troubles d'hyperfonctionnement des

(1) Conférence prononcée au Congrès de l'Association dentaire du Québec à Québec, le 1 juin 1956.

glandes endocrines. On peut avoir recours à la chirurgie, à la radiothérapie ou au traitement par certains anti-endocriniens, mais ces moyens, l'un autant que l'autre, comprennent des limites qui réduisent leur application. Je ne mésestime pas la participation heureuse de toutes les disciplines scientifiques et médicales dans le traitement des maladies endocriniennes. Je veux seulement vous rappeler qu'au prix de tous les efforts louables, méritoires et couronnés de succès, qui ont fait de l'endocrinologie, en moins de 30 ans, l'une des spécialités les plus avancées de la médecine, le traitement de ces maladies n'est pas de tout repos comme peut l'être celui d'une infection banale.

La situation du dentiste vis-à-vis des troubles endocriniens est la même que pour les maladies de la nutrition et de certaines affections musculaires et nerveuses. Il se doit de connaître des signes qui caractérisent ces troubles afin de les indiquer à son patient et à son médecin traitant, aussitôt qu'ils lui apparaissent. Il se doit aussi d'évaluer proprement la gravité de ces mêmes troubles pour apporter dans l'exercice de ces fonctions les précautions qui s'imposent. Ces deux motifs suffisent pour qu'aucun membre de la profession dentaire n'affiche de désintéressement vis-à-vis ce captivant chapitre de la physiopathologie humaine.

Il nous est impossible, même rapidement, de faire une revue des principaux syndromes en ce moment. Il faut nous contenter de citer ceux qui sont d'incidence plus fréquente et qui présentent des manifestations dentaires, buccales ou faciales.

Thyroïde

En rapport avec l'hypothyroïdie, il peut arriver exceptionnellement qu'on soit amené à rendre des services dentaires à des crétins, mais il arrive plus fréquemment qu'on rencontre des crétineux ou des crétinoïdes qui sont atteints moins gravement dans leur développement physique et mental que les crétins eux-mêmes. Ces deux types sont caractérisés dans leur aspect physique par une taille

en dessous de la normale, des traits empâtés, un air idiot, la bouche habituellement ouverte, le regard terne. Leur démarche est lente. Ils peuvent difficilement apprendre à lire et à écrire, mais peuvent vaquer à des occupations manuelles qui n'exigent pas de réflexions dans leur exécution. Cependant ces caractères peuvent varier en plus ou en moins dans leur sévérité.

Ce qui nous intéresse particulièrement dans l'hypothyroïdie à l'époque prépubérale c'est le retard dans la croissance osseuse et dans l'éruption des dents. C'est un fait connu de tous que l'examen des mâchoires chez les hypothyroïdiens révèle un retard de l'éruption des temporaires chez l'enfant, ou leur rétention prolongée à un âge où elles devraient tomber, entraînant ainsi l'inclusion multiple des permanentes. Il est reconnu depuis les travaux de Silberberg, de Becks et d'autres que la participation de la thyroïde à la croissance des os est loin d'être négligeable. C'est elle qui préside à la formation des centres d'ossification dans tous les os longs. C'est elle qui également favorise le plus la soudure des cartilages de conjugaison. La croissance des os longs telle qu'on l'explique maintenant est maintenue par l'action synergistique de l'hormone somatotrope de l'hypophyse antérieure et de la thyroxine jusqu'à l'adolescence. La première entretient la chondrogénèse, la seconde veille à la maturation du cartilage et à son calcification. A la puberté, les hormones sexuelles viennent renforcer l'action de ces deux hormones. L'exagération de ces mécanismes épuiserait bientôt les potentialités de la croissance des os qui, à partir de ce moment, ne se reconstitueraient plus que selon la forme définitive qu'ils viennent d'atteindre. Il convient ici de rappeler que la thyroïde exerce une action stimulante de la croissance en assistant l'hypophyse antérieure dans l'élaboration de l'hormone somatotrope. Sans thyroïde, la croissance cesse non seulement parce que la thyroxine est absente de la circulation mais aussi parce que les acidophiles de l'hypophyse ne se différencient plus eux-

mêmes et ne satisfont plus les besoins de l'organisme en somatotrophine.

Ce schéma général s'applique au cas du tissu osseux des maxillaires qui subissent des changements au cours de l'éruption des dents. Chez l'individu normal la croissance et le remodellement osseux dépend de l'équilibre entre l'activité des ostéoblastes et des ostéoclastes. Les ostéoblastes construisent l'os selon un modèle cartilagineux, c'est l'ossification endochondrale, ou selon une zone de différenciation des membranes fibreuses qui constituent le périoste, c'est l'ossification membraneuse. Les ostéoclastes résorbent les zones osseuses déjà formées par des mécanismes encore mal expliqués.

Pendant l'éruption des dents permanentes et la chute des temporaires, on peut distinguer trois genres de facteurs qui participent à ces phénomènes. Les facteurs qui interviennent dans la formation et la calcification de la racine de la dent permanente, ceux qui favorisent la dentinoclasie, ceux qui stimulent les transformations osseuses. Dans le premier cas, on sait que la formation de la racine dépend de l'activité de l'épithélium de la membrane de Hertwig. C'est ce dispositif qui donne à la racine son modèle en orientant la prolifération des odontoblastes le long de ce cylindre cellulaire. Or la qualité et l'activité de ce tissu est fonction de l'apport sanguin qui l'entretient. Il a été démontré que la vascularisation dans la région environnant ce tissu, principalement chez les rongeurs, est un facteur déterminant dans la formation d'une dent normale. Baume a bien mis en évidence l'action de la thyroxine sur la différenciation des améloblastes et sur la prolifération des capillaires qui maintiennent en fonction ces cellules. La thyroxine est donc un élément important dans la formation de la dent elle-même. Elle participe aux phénomènes qui facilitent l'éruption de la dent puisqu'elle favorise l'activité des ostéoclastes. Que ces cellules exercent leur action sur la dentition ou sur l'os, c'est le même mécanisme mû par les mêmes influences en dépit des deux termes de dentinoclasie ou

d'ostéoclasie. La dentine des racines doit être résorbée; la lame osseuse des alvéoles et celle qui entoure le bourgeon dentaire doivent également céder pour que ce dernier migre en position correcte. Or chez l'animal privé de thyroïde, on remarque que les ostéoclastes sont rares, que la résorption est lente et que la dentinoclasie est arrêtée ou presque. En somme tout favorise la rétention des permanentes dans leurs alvéoles.

Quelle attitude prendre devant un cas d'hypothyroïdie où le développement de la dentition est retardé? L'étude radiologique des maxillaires peut nous servir à évaluer ce retard. Il y a aussi l'étude radiologique des centres d'ossification de la main. A cet sujet l'atlas de Todd rend de grands services; il nous indique l'âge du squelette se rappelant qu'un hypothyroïdien d'âge chronologique de huit ans peut avoir un squelette dont le degré de différenciation est comparable à celui d'un enfant de quatre ans ou moins. La difficulté chez un hypothyroïdien c'est de déterminer si on doit intervenir par l'extraction des temporaires dans le but de faciliter l'éruption des permanentes. D'une façon générale, aucune intervention et aucun traitement ne doit être entrepris avant de savoir à quel point le patient peut répondre à l'amélioration de ses fonctions endocriniennes. Si un traitement par un extrait thyroïdien n'apporte pas l'amélioration désirée, il vaut mieux conserver les temporaires, autrement le patient court le risque qu'aucune autre ne vienne les remplacer. Mais si l'organisme répond au traitement et qu'une amélioration générale se fait sentir, que la croissance reprend ou se poursuit à un rythme accéléré, que la résorption des racines devient plus évidente, il y a lieu d'éliminer les temporaires qui surplombent des permanentes en voie de formation ou même complètement formées. L'étude de la fonction thyroïdienne en rapport avec le développement de l'appareil dentaire vient de nous fournir un excellent exemple de l'importance des facteurs endocriniens dans la pratique de la dentisterie moderne.

A part ces effets sur la croissance, la thyroïde influence le métabolisme en général. C'est dire qu'au cours de son insuffisance toutes les fonctions sont déprimées, principalement la circulation, la nutrition et la reproduction. L'absorption intestinale est amoindrie, la régulation thermique est abaissée. Les hypothyroïdiens sont hypotendus, frileux, somnolents principalement après les repas; ils sont sujets à s'enrhumer et en général se défendent mal contre tout genre d'infections. Il est à retenir que tout traitement qui comporte un traumatisme, si léger soit-il, ne doit pas être appliqué sans restrictions à ces patients.

Quand à la relation qu'on établit entre l'hyperfonctionnement thyroïdien et l'incidence de la carie dentaire elle ne semblerait se justifier au point de prétendre que la carie rampante trouverait sa cause dans l'hypothyroïdie. Elle pourrait être une cause adjuvante mais non prépondérante. Il importe de noter à ce moment que des expériences préliminaires ont montré que le fluor à la dose de 20 ppm ne diminue pas l'incidence de la carie chez les animaux rendus hypothyroïdiens au moyen d'antithyroïdiens.

Si la thyroïde déprimée dans sa fonction ne manque pas d'intéresser le dentiste au cours de ses manifestations, l'hyperactivité thyroïdienne peut ainsi susciter son attention bien que cette fois, surtout chez l'enfant, l'hyperthyroïdie est moins fréquente. Il faut donc exercer davantage son sens clinique pour déceler l'anomalie. Les signes sont plus discrets. Rappelons les plus connus, comme l'hypertension, la tachycardie, l'exophtalmie, le tremblement des extrémités et aussi des lèvres et de la langue. Le tremblement des lèvres devient plus évident si on demande au patient de siffler. L'âge du squelette est un peu en avant de la normale de même que la chute des temporaires et l'éruption des permanentes. En général l'accélération de la croissance est loin d'être aussi accusée ici que ne peut l'être le retard dans les cas d'hypothyroïdie.

Surrénales

Un autre exemple, bien que beaucoup plus rare est celui du syndrome d'Addison. De fait cette maladie est assez peu fréquente heureusement, elle se rencontre ordinairement entre 30 et 50 ans. Mais quelques cas ont été rapportés chez les enfants. Talbot cite un cas assez typique. Un enfant de huit ans de taille normale est entré à l'hôpital sous le motif qu'elle est parfois atteinte de convulsions. Elle affecte pour le sel un goût désordonné, salant tout, même les déserts, et se plaint de faiblesse musculaire. A la suite d'une chute bénigne, elle entre en convulsions et demeure dans un état de demi-stupeur. A l'examen on note déshydratation assez marquée, hypotension, pigmentation de la peau et des muqueuses buccales et excoriations aux commissures. Un diagnostic d'hypocorticalisme a été porté sur ce cas qui plus tard s'est démontré compliqué d'hypoparathyroïdie. Il est remarquable que la plupart des signes qui ont permis de faire ce diagnostic, si l'on s'en tient aux signes cliniques, ont dû apparaître avec autant de netteté à son dentiste. Toute pigmentation de la muqueuse buccale n'indique pas la présence du syndrome d'Addison, même que cette maladie peut se rencontrer sans modification pigmentaire de la peau. Il reste quand même que toute variation de coloration sur les lèvres, les muqueuses ou la peau doit faire le sujet d'une enquête sérieuse. Ziskin mentionne des changements dans le tissu gingival, principalement un épaississement de la couche cornée et du derme.

Le syndrome d'Addison qu'il apparaisse chez l'enfant ou chez l'adulte est caractérisé par les mêmes signes, les mêmes insuffisances. Il convient donc de rappeler que l'hypofonction corticale diminue la résistance du patient à tout genre d'agression: traumatisme, infection, jeûne ou mauvaise alimentation, effort musculaire, intoxication. De fait chaque fois qu'il faut lui administrer des drogues ou autres thérapies faut-il le faire avec beaucoup de soins et de préparation. Un addisonien peut avec un traitement aux extraits

surrénaux et un régime alimentaire approprié atteindre un *modus vivendi* assez près de la normale. Depuis l'avènement des extraits corticaux, de la cortisone et de l'ACTH, la survie et les conditions physiques chez ces patients ont été considérablement améliorées. Même dans ces circonstances faut-il tenir compte qu'on traite un individu fragile qui peut répondre d'une façon imprévue à l'action de nos médicaments sédatifs ou anesthésiques. Toute intervention chirurgicale de notre part doit se faire seulement chez le patient hospitalisé, c'est la seule façon d'éviter le risque d'une dangereuse crise par insuffisance aiguë.

En rapport avec les troubles fonctionnels il faut mentionner le syndrome de Cushing qui originalement s'applique aux manifestations provoquées par une tumeur basophile de l'hypophyse antérieure; ces manifestations sont celles de l'exagération de la fonction de la cortico-surrénale et s'identifient au syndrome d'Apert-Gallais. Dans un cas comme dans l'autre l'effet est le même, mais le point de départ varie. Aujourd'hui on peut entraîner la production d'un Cushing sans lésion de l'hypophyse si l'on soumet un individu à un surdosage d'ACTH. De même l'administration soutenue de cortisone s'accompagne de la plupart des signes qu'on observe dans la maladie de Cushing. Cette maladie apparaît surtout chez les femmes vers la trentaine, mais les enfants n'en sont pas exempts. Les modifications de la configuration sont caractéristiques. On parle de visage en pleine lune et de cou de bison. L'obésité s'installe au tronc, peu aux épaules et aux cuisses, pas du tout aux jambes et aux bras. On note la présence de vergetures larges et violacées sur les parties latérales de l'abdomen. Parfois le Cushing s'accompagne d'hirsutisme ou de virilisme. L'hypertension est habituelle. L'ostéoporose atteint principalement les vertèbres et les côtes, mais peut aussi envahir tout le squelette. Les fractures spontanées sont relativement fréquentes.

Il n'y a malheureusement pas eu d'études approfondies des conditions des

maxillaires chez les malades atteints de Cushing ou d'hyperplasie corticale primaire. Dans ce dernier cas on signale une croissance exagérée due à la sécrétion anormale d'androgènes de source cortico-surrénalienne. Rushton a rapporté une éruption accélérée des dents chez quelques uns de ces cas. Ziskin rapporte, que chez un enfant de sept ans, le tissu gingival a une couche de kératine réduite, manifeste une dégénérescence hydropique dans la couche intermédiaire et une hyperplasie de la couche de Malpighi. L'expérimentation avec les hormones stéroïdes du cortex devrait nous fournir des indications plus précises. Retenons toutefois que les cas d'hyperactivité cortico-surrénalienne méritent une attention spéciale à cause des conditions hypertensives et ostéoporotiques qui règnent alors. Il n'y a pas lieu de rappeler ici les nombreuses précautions à prendre dans la manipulation de ces patients, précautions qui sont connues de tous.

Ostéoporose

L'ostéoporose est une manifestation possible du Cushing, mais d'autres conditions endocriniennes peuvent la provoquer. Albright définit l'ostéoporose comme un défaut de formation de matrice organique de l'os par inhibition des ostéoblastes; l'activité ostéoclasique demeurant normale, la résorption osseuse qu'elle détermine l'emporte sur la reconstruction. Les zones spongieuses sont les premières affectées et les plus gravement atteintes, mais le cortex peut venir aussi à fléchir, de là les fractures spontanées.

La maladie de Cushing prédispose à l'ostéoporose en ce que les hormones glucocorticoïdes du cortex surrénalien inhibent les ostéoblastes. L'arrêt de sécrétion des hormones sexuelles dans la ménopause ou à la suite de dénutrition, l'immobilisation prolongée d'une partie du corps pour cause de fractures chez les vieillards par exemple, sont autant de conditions favorables à l'ostéoporose et qui peuvent en général répondre assez bien au traitement des hormones qui stimulent l'anabolisme protéique comme

les androgènes et les estrogènes. Il arrive souvent au dentiste d'observer des régions ostéoporotiques en examinant des radiographies dentaires. L'ostéoporose des maxillaires se caractérise par la disparition des trabécules dans les espaces interdentaires et dans les régions sus ou sous-radiculaires. La lamina dura est ordinairement conservée. Ceci s'explique du fait que la fonction masticatoire n'est jamais complètement nulle. Il suffit du peu de pression que le malade exerce sur ces maxillaires quand il mâche et avale, pour empêcher la lyse totale du tissu osseux à ce niveau. L'ostéoporose la plus fréquente dont le dentiste doit tenir compte est celle qu'on classe sous le nom d'atrophie osseuse par manque d'usage. Assez souvent on note qu'une dent demeurée sans impact après avulsion de ses antagonistes continue à faire éruption et l'os qui l'entoure devient poreux. Cette ostéoporose localisée persistera tant que la dent ne parviendra pas en contact avec une nouvelle surface masticatoire. Sans exercice les ostéoblastes sont privés de leur stimulus usuel. Ces cellules dépendent donc pour être fonctionnelles de stimuli mécaniques aussi bien que chimiques. Les hormones sexuelles n'agissent probablement pas directement sur les cellules osseuses elles-mêmes mais contribuent à leur développement en favorisant la synthèse des protéines et tous les processus qui en dérivent.

Gonades

Il vient d'être question des hormones sexuelles et de leurs effets sur le métabolisme osseux, il convient aussi de rappeler la participation de ces hormones à des phénomènes qui se refléchissent sur les tissus buccaux et dentaires.

En importance les estrogènes occupent ici le premier rang. Il a été démontré que durant la grossesse les estrogènes sont rapidement inactivés, que le taux de sécrétion de la progestérone est augmenté. Il faut noter aussi la présence d'hormone choriogonadotrope qui régularise leur production. Ces hormones entretiennent un nouvel équilibre hormonal susceptible

d'opérer des changements dans l'épithélium buccal qui souvent prend un aspect pathologique. 40% des femmes enceintes auraient des troubles gingivaux. Ziskin a fait une classification de ces diverses manifestations selon le nombre et la gravité des signes. Certains cas ne comportent qu'une tendance hémorragique ou encore un léger oedème des papilles. D'autres cas par contre présentent des anomalies plus localisées et plus marquées: papilles hypertrophiées d'un rouge sombre ou tumeur pédonculée rappelant l'épulis.

Des recherches entreprises des dernières années ont mis en évidence l'effet des glandes sexuelles sur l'incidence de la carie expérimentale. En autres indications, il semble que les estrogènes diminuent la résistance à la carie, non par une action spécifique sur la dent elle-même, mais par une diminution du flot salivaire et de l'activité de la pytaline. Quant à l'influence de ces mêmes hormones et des androgènes sur l'éruption des dents, on soupçonne une influence de leur part sur le développement des os de la face. Sans aller jusqu'à parler de dimorphisme des os de la face, il est possible que la croissance de la mandibule et des centres d'ossification responsables des dimensions antéro-postérieures de la face soit modifiée à la puberté quand la sécrétion des estrogènes s'installe définitivement. C'est d'ailleurs ce que laisse entendre les travaux de Sutro et de Rushton.

Hypophyse

Nous avons déjà souligné plus haut le rôle joué par l'hypophyse antérieure dans la croissance. Les propriétés chondrogénotropes de l'hormone de croissance ou somatotrophine sont trop universellement connues pour qu'on en discute davantage. Rappelons seulement que cette hormone, quand elle fait défaut, produit le nanisme, quand elle est sécrétée en excès pendant la phase de croissance entraîne le gigantisme, et qu'elle est responsable de l'acromégalie, quand l'adénome acidophile qui en est la cause se développe à l'âge

adulte. On sait que ce syndrome évolue d'une façon assez insidieuse. L'augmentation du volume de la glande est responsable de la céphalée bitemporale et des troubles dans la vision latérale qui comptent parmi les signes précoces de ce syndrome. Le patient assiste à une modification lente et progressive de ses traits et à l'accroissement de ses extrémités. La macroglossie peut parfois entraîner une certaine difficulté dans le langage et souvent des troubles de la déglutition et de la respiration. La muqueuse est aussi le siège d'un certain épaississement.

Là où les signes sont les plus évidents au dentiste, c'est surtout dans l'ossature de la face et du crâne. Les structures supérieures, comme les zones sous-orbitaires du frontal, les régions mastoïdes et zygomatiques, la crête occipitale, le maxillaire supérieur, subissent un accroissement en épaisseur ou en hauteur, (sauf le dernier qui croît seulement en hauteur). On peut difficilement parler ici de croissance intramembraneuse, processus normal suivant lequel ces os se sont développés. Il s'agit d'une croissance osseuse par apposition de nouvelles couches osseuses sur les tables externes et surtout sur les insertions musculaires. Les changements qui apparaissent ici sont secondaires à la transformation des tissus mous. Qu'ils soient les éléments instigateurs de ces changements, il n'y a rien de surprenant à cela. Toute sécrétion augmentée de somatotrophine encourage la splanchomégalie et l'hypertrophie musculaire. Cette hormone stimule la synthèse des protéines, la rétention des phosphates, la division mitotique. Bref tout ce qui peut, comme processus, participer à la croissance. Les muscles de la face subissent des effets analogues à ceux de la langue. La partie inférieure grossit et s'élargit par action directe de l'hormone sur le cartilage des ailes du nez. Le maxillaire inférieur est celui qui subit les déformations les plus évidentes. Il y a allongement des branches avec déplacement des apophyses coronoïdes, élargissement de l'angle gonial, augmentation des

dimensions antéro-postérieures, latérales et verticales du corps de la mandibule.

Il existe au niveau du condyle du maxillaire inférieur, une couche de cellules cartilagineuses qui en recouvre la surface externe, et qui vient en contact avec le ménisque. Ce cartilage articulaire en s'épaississant provoque un nouvel allongement du condyle et de la branche montante. Cette dernière est le siège d'une apposition d'os à son bord postérieur, tout comme l'apophyse coronoïde. Le procès alvéolaire, surtout à la table externe, gagne en épaisseur et en hauteur. L'angle gonial devient plus obtus à cause de la poussée verticale de l'articulation temporo-maxillaire qui s'exerce de plus en plus postérieurement et de la traction du masséter en sens opposé. Celui-ci prend plus de force à cause de l'allongement de ses fibres causé par le développement antérieur de son insertion inférieure. Ces déviations sont renforcées par le remodellement qui s'opère sur les bords antérieurs de l'apophyse coronoïde et de la branche montante. La résorption de sa surface accentue la force du masséter sur l'angle gonial.

L'acromégalie est d'évolution lente, ordinairement de 5 à 30 ans, et est conditionnée par la progression de la tumeur de l'hypophyse. Ce syndrome s'accompagne souvent de diabète et d'ostéoporose. Il y a donc lieu de tenir compte de ces complications au cours des interventions dentaires. Les phases terminales se caractérisent par un épuisement de la glande dû à la compression de la tumeur sur les cellules responsables des autres sécrétions. Le patient en vient à donner des signes d'insuffisance hypophysaire, des troubles visuels de plus en plus graves et peut être emporté par suite d'hypertension intracrânienne.

Les acromégales nécessitent des soins dentaires continuels. S'ils sont porteurs de pièces de prothèse, il y a obligation à les refaire fréquemment ou selon les périodes évolutives de la maladie. S'il y a complication diabétique, il faut surveiller les tissus mous qui sont forcément moins

tolérants. Il est à remarquer que ce genre de diabète est insulino-résistant.

Parathyroïdes

Les troubles des parathyroïdes sont peu fréquents mais les individus qui en sont atteints peuvent manifester des déformations aux os longs, au bassin aussi aux mâchoires. Ces lésions osseuses sous le nom d'ostéite fibro-kystique ou maladie de Von Recklinghausen sont consécutives à un apport alimentaire insuffisant en calcium ou exagéré en phosphate en présence d'hypersécrétion parathyroïdienne. C'est ainsi qu'en Amérique où le lait fait partie de l'alimentation les manifestations osseuses dans l'hyperparathyroïdie sont rares alors qu'elles sont fréquentes en Europe où le régime diffère sur ce point.

La présence de kystes aux maxillaires supérieur ou inférieur nécessite un diagnostic précis. Dans le cas d'une raréfaction osseuse par excès d'hormone parathyroïdienne, on observera un ou plusieurs foyers kystiques, avec lyse osseuse totale incluant la lamina dura si la lésion se situe au voisinage des racines. Le test de Sulkowitch simple et rapide fournit certaine indication du taux de calcium urinaire. Quand le test est positif il y a lieu de demander un examen clinique plus poussé et surtout des tests de laboratoire pour renseigner sur la calcémie, la phosphatémie, la phosphatase alcaline du sérum et l'élimination urinaire du calcium et des phosphates. Les kystes d'origine parathyroïdienne (Albright les nomme pseudo-kystes) disparaissent sans intervention locale aussitôt que la fonction parathyroïdienne est corrigée, contrairement aux kystes radiculaires ou autres qui nécessitent l'énucléation.

On a déjà rapporté quelques cas d'hypoparathyroïdie avec altérations des structures dentaires chez l'homme. On sait que chez le rongeur la parathyroïdectomie ralentit la dentinogénèse et inhibe la calcification.

Chez l'enfant qui est atteint d'hypoparathyroïdie postnatale il est possible d'en retracer la période d'initiation avec

assez de précision quand la croissance des dents et la calcification des racines ont été influencées.

Une autre forme d'hypoparathyroïdie qui a été décrite par Albright et ses collaborateurs, qui la nomment pseudo-hypoparathyroïdie. Il s'agirait d'un étrange syndrome où les glandes parathyroïdes sont fonctionnelles mais où les tissus ne répondent pas à l'hormone mise en circulation. On n'a pas encore mentionné d'anomalies dentaires dans les quelques rares cas qui ont été rapportés.

Cette brève revue concernant les fonctions endocriniennes en rapport avec la croissance des os et des dents et le métabolisme des tissus mous de la bouche n'a d'autre mérite que de susciter une attention plus grande de la part du praticien dentiste dans l'exercice de son travail quotidien. Il trouve singulier qu'on lui rapporte parfois presque inopinément que des troubles osseux, musculaires ou nerveux ont eu des manifestations précoces au niveau de la face ou de la bouche. En plus d'une circonstance il a lui-même observé ces signes sans avoir cherché à les interpréter. Pour ce faire, il faut entrer en communication avec le médecin traitant ou l'endocrinologue. Le dentiste ne devrait pas sentir de remords à revendiquer l'attention et l'aide du médecin dans ce cas. Il vaut mieux l'alerter inutilement que trop tard.

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Nouvelles de l'Association

Dentifrices aromatisés aux fruits

Selon le Financial Post, on vient de mettre sur le marché d'Angleterre des dentifrices aromatisés aux fruits, qui semblent plaire énormément au public. Les pharmaciens sont aux abois, car il leur faut avoir en montre des pâtes dentifrices aux différentes essences et, de ce fait, leur stock a dû se multiplier une douzaine de fois.

Impôt sur le revenu pour les comptes recevables

«Notre expérience nous montre qu'un grand nombre de personnes dont les revenus leur viennent d'honoraires professionnels, comme les médecins, les dentistes, les avocats, les comptables, les architectes, etc, ignorent que dans certaines circonstances des dettes qui leur sont dues deviennent sujettes à l'impôt au moment de leur mort. Par exemple, prenons les livres de comptabilité d'un médecin: un médecin paie généralement son impôt sur le revenu sur les honoraires qu'il a perçus durant l'année; néanmoins, ses livres montrent probablement des montants qui lui sont dus. Ces notes, moins un certain pourcentage jugé incollectables, deviennent taxables à sa mort. On peut se rendre compte que dans certains cas, le montant des impôts peut être assez lourd. Il y a cependant certains moyens de faire baisser ces impôts. Si le docteur J. lègue ses comptes par testament à quelqu'un, cette personne, plutôt que la succession, s'engage à payer l'impôt pour l'année où les comptes sont perçus. Aussi, comme il est probable que les notes seront honorées au cours de plusieurs années, le bénéficiaire n'aura pas à payer de gros impôts, puisqu'il recevra peu d'argent, chaque année. Cette façon de faire est recommandable. Cependant, il peut se présenter des cas où ce système est assez onéreux. Nous nous souvenons d'un homme, dont l'épouse avait des revenus personnels substantiels; à sa mort, il lui légua par testament ses comptes recevables. La presque totalité de ces comptes recevables furent payés peu après sa mort et ainsi les revenus de la veuve, additionnés des revenus de son mari, atteignirent une somme considérable. Elle dû payer un impôt beaucoup plus fort que celui qu'aurait payé la succession, si les comptes recevables avaient été légués à celle-ci.

«Si un testament ne prévoit pas un légataire bien spécifié pour les comptes recevables, il y a trois façons pour un exécuteur testamentaire de calculer l'impôt. Les comptes peuvent tout simplement être ajoutés aux revenus de l'année où le défunt est mort; ou l'exécuteur peut faire un rapport d'impôt séparé sur ces comptes, comme si ces comptes avaient été les seuls revenus du défunt pour l'année courante; dans ce cas, l'exécuteur testamentaire ferait bien de réclamer toutes les exemptions permises par la loi. La troisième méthode consiste à diviser la somme totale des comptes en cinq parties égales et à en appliquer une portion aux revenus des quatre dernières années qui précèdent la mort; la cinquième partie est additionnée aux revenus du défunt pour l'année de sa mort. On prendra évidemment la méthode qui donnera le moins d'impôt à payer. Nous recommandons aux professionnels qui ont beaucoup de comptes recevables de bien penser aux complications d'impôt avant de décider de léguer dans leur testament leurs comptes à un légataire en particulier ou de les faire entrer dans leur succession.»

(Ces renseignements proviennent d'une publication du Canada Trust Company.)

Divers

—Le docteur H. T. Whittaker, d'Edmonton, ancien président de l'Association dentaire canadienne, en 1920, est décédé le 20 juin.

—Le docteur Albert Joachien, de Bruxelles, Belgique, a été réélu président de la Fédération dentaire internationale, à sa 44e réunion annuelle tenue à Zurich, Suisse, du 28 mai au 3 juin.

—Le docteur Harold Hillenbrand, secrétaire de l'Association dentaire américaine et membre honoraire de l'Association dentaire canadienne, est un des six vice-présidents honoraires de la Fédération dentaire internationale. Il a été nommé président d'un comité chargé de reviser les règlements et ré-élu au Comité des Finances à l'assemblée de Zurich.

—L'Association dentaire américaine célébrera son centenaire de fondation en organisant sa centième réunion annuelle à New York, du 21 au 24 septembre 1959.

—Le docteur Carl H. Sibelius, directeur dentaire de l'Etat de Tennessee, a été nommé

officier dentaire de l'Organisation mondiale de la Santé pour mettre en oeuvre le programme dentaire de l'O.M.S., de Genève, Suisse.

Le service national de santé en Grande-Bretagne

Le docteur R. J. Hooker, L.R.C.P. Londres, M.R.C.S., L.D.S. Angleterre, président de l'Association dentaire anglaise vient de résumer, dans son discours présidentiel prononcé à la réunion annuelle de l'A.D.A., la situation de la profession dentaire en Angleterre. En deux paragraphes, il a décrit clairement et complètement cette situation. Il est à souhaiter que tout dentiste canadien lise ces lignes qui sont reproduites "in extenso".

"Je suis d'avis que ce fut une tragédie de donner, dès le début, au plan national de santé un esprit de politique, quand il aurait dû être complètement dénué de toute partisanerie semblable. Mais cette situation n'excuse pas ces membres de la profession, qui nonobstant leurs tendances politiques, perdent de vue ce à quoi nous devrions tous tendre, je veux dire la liberté de prescrire et la faculté de prodiguer à nos patients les traitements que nous jugeons à propos de donner. Cette question a tellement d'importance que je crois que nous avons droit de critiquer le plan tel qu'il fonctionne, surtout quand nous savons trop combien de collègues se sentent frustrés et embarrassés et développent, de ce fait, du ressentiment.

"A force de travailler sous l'égide du Service, on se rend compte qu'il faut attacher beaucoup d'importance à la médiocrité. Tous doivent utiliser les mêmes normes. Peu importe de viser à bien faire: à moins de le donner à tous, personne n'en aura. On ne prise guère l'habileté, l'expérience ou les petits soins qu'on peut donner à son patient. Tous les traitements ont la même rémunération; ce qui veut dire que le dentiste qui exerce avec le moins de frais, avec l'instrumentation la plus vile, est celui qui gagne le plus. Notre profession est ainsi promise à un bel avenir! L'intérêt du patient compte pour peu quand il faut satisfaire un troisième partenaire, l'Etat. Le serment d'Hippocrate spécifie: 'J'emploierai la technique, que, d'après mon expérience et mon jugement, je considère la plus bénéficiaire au patient que je traite et m'abstiendrai de toute forfaiture et de tout faux-fuyant.' Comment peut-on observer ces principes, quand il y a un tiers, qui peut nous dire: 'Non', quand on se propose de faire de telle façon? Quand nous faisons nos études, nous apprenons des techniques savantes que nous ne pouvons pas mettre en pratique pour les patients du Service de Santé. Le Ministère vous dira que vous pouvez utiliser ces techniques, même qu'il le désire. Tout ce que vous avez à faire c'est

de soumettre un estimé spécial et cet estimé sera naturellement soumis à l'officier dentaire de la région. Nous savons tous quelle chance nous avons de faire approuver ce traitement, qui sort de l'ordinaire! Et il faut alors, à notre grande humiliation, expliquer aussi bien que possible au patient désappointé les raisons qui ont motivé ce refus! D'autant plus que dans un cabinet achalandé, on n'a pas de temps pour ces chnoiseries! On essaie d'éviter autant que possible toute cette bureaucratie."

Fluoruration aux Etats-Unis

Les résidents de Cleveland ont commencé à boire de l'eau fluorée, le 2 juillet. L'aqueduc du Grand Cleveland dessert 1,200,000 personnes sur une superficie de 500 milles carrés renfermant 60 municipalités.

D'après des renseignements reçus du Conseil d'Hygiène dentaire de l'Association dentaire américaine, il y a maintenant 1232 municipalités qui fluorurent leur eau et environ 25,563,927 personnes boivent cette eau.

Déduction de fonds de pension

La Chambre des Communes anglaises vient d'approuver une loi qui permet aux personnes qui ne sont pas employées de retenir 10 pourcent du total de leurs revenus annuels pour se créer un fonds de retraite. Le maximum qui peut être aussi retenu ne doit pas dépasser \$2100, par année, et les personnes qui dépassent 40 ans peuvent retenir un montant plus considérable, qui ne doit cependant pas dépasser 15%, à l'âge de 48 ans. A Washington, le projet de loi Keogh-Jenkins est à l'étude depuis quelques mois. Ce bill, qui est devant le Congrès, permettrait aux dentistes et aux autres individus qui travaillent pour eux-mêmes de se créer un fonds personnel de retraite en plaçant une partie de leurs revenus dans un fonds de pension, qui ne serait pas sujet à l'impôt sur le revenu.

A plusieurs reprises, l'A.D.C. a fait des demandes semblables au Ministère canadien des Finances. On demandait d'accorder les mêmes privilèges dont jouissent les employés des industries et des corporations. Un tel amendement à la loi de l'Impôt sur le Revenu corrigerait une injustice dans le domaine d'un plan de retraite, qui est faite aux individus qui travaillent pour eux-mêmes. La décision que vient de prendre le gouvernement anglais et la considération donnée à cette question aux Etats-Unis vont peut-être influencer notre gouvernement à se prononcer dans le même sens.

**Quarante-quatrième réunion annuelle de la
Fédération dentaire internationale, à Zurich,
du 28 mai au 3 juin 1956**

Résolutions adoptées:

**1) Au sujet des dentifrices "thérapeu-
tiques" —**

"Attendu que, dans le monde entier, il se fait une campagne de publicité pour promouvoir la vente de dentifrices qu'on appelle "thérapeutiques", qui, sur la foi de recherches scientifiques quelconques, sont supposés prévenir ou arrêter la carie dentaire grâce aux ingrédients qu'ils contiennent;

"Attendu que l'annonce de prétentions qui ne sont pas fondées sur des faits scientifiques certains et de nature à prévenir des affections dentaires, trompe le public et le porte à oublier les mesures reconnues de saine prévention, comme une alimentation convenable, des traitements dentaires réguliers, une habitude suivie d'hygiène buccale et d'autres du même genre, il est résolu:

"Que les associations, qui sont membres de la F.D.I., soient invitées à prendre les mesures qui s'imposent, de concert avec les autorités responsables, pour empêcher qu'on exploite le public en matière de santé, en annonçant et en sollicitant la vente des dentifrices "thérapeutiques", qui ne sont pas acceptables à la profession dentaire, malgré les raisons qu'on apporte en leur faveur."

2) Au sujet de l'enseignement dentaire —

"Attendu que l'échange gratuit de matériel scientifique, tel que pellicules cinématographiques, transparents et autres adjuvants éducatifs, a une grande valeur pour tenir la profession renseignée sur ce qui se passe dans le domaine international;

Il est résolu:

"De demander à toutes les associations qui sont membres de la F.D.I. d'exercer une pression sur leur gouvernement respectif pour qu'il adopte ou qu'il approuve la convention de l'Unesco au sujet du libre échange de matériel scientifique."

**3) Au sujet des services dentaires de
l'armée —**

"Il serait bon de standardiser certains items qui font partie de l'équipement dentaire, en particulier toutes les parties qui comprennent des vis et une mécanique de précision, comme les seringues (pistons et aiguilles), pièces à main, et contre-angles. La Commission suggère que la F.D.I. se procure par voie officielle un catalogue de l'équipement dentaire de l'armée américaine pour qu'elle puisse comparer les items qui sont semblables et qu'elle fasse un choix pour trouver ceux qui pourraient être standardisés.

"La Commission suggère qu'on demande un représentant à SHAPE, qui ne soit pas nécessairement permanent et qui pourrait, s'il le désire,

être le délégué dentaire à l'Organisation Mondiale de la Santé. SHAPE a déjà un comité qui s'occupe de la standardisation, mais non de l'équipement dentaire. La Commission demande qu'on fasse tous les efforts possibles pour obtenir cette représentation."

"La Commission des services dentaires de l'armée, après avoir pris connaissance de la déclaration du représentant du Comité international de la Croix-Rouge, M. Schoenzolzer, où il disait que les conventions de Genève du 12 août 1949 constituent, à la lumière des conditions légales actuelles, le meilleur instrument pour assurer la protection des individus en temps de guerre et plus particulièrement des membres du personnel médical de toutes catégories; la Commission recommande que tous les membres de la F.D.I., militaires ou civils, approfondissent ces textes et, qu'en cas de guerre, ils s'assurent qu'ils soient mis en vigueur de la façon la plus complète et la plus répandue possible. Elle demande de plus que le Conseil de la F.D.I. conclue les arrangements nécessaires avec le Comité international de la Croix-Rouge pour obtenir et distribuer partout les documents nécessaires à une parfaite compréhension de ces textes."

Faits saillants de la réunion

1) Il y a 49 associations nationales qui sont membres actifs de la Fédération.

2) Le nombre des membres adhérents personnels est de 3,261.

3) L'Organisation mondiale de la Santé est à constituer un Comité de consultation sur l'hygiène dentaire; elle a approuvé pour 1957 un groupe d'études sur les services d'hygiène dentaire pour les enfants; elle se propose la formation d'un comité d'experts en hygiène dentaire pour étudier diverses questions se rapportant à l'usage des flourures en prévention de la carie dentaire.

4) On a proposé la publication d'un bottin des écoles dentaires du monde.

5) L'assistance se chiffrait à 720 personnes, venant de 27 pays différents.

6) On notait la présence de notables délégués de différentes organisations internationales, entre autres l'Organisation mondiale de la Santé, l'Association médicale du Monde; la Société internationale de Sécurité sociale; le Comité international de la Croix-Rouge; l'Arpa internationale; des représentants des Ministères de la Santé de différents pays.

7) Réunions futures—

1957—Douzième Congrès international, à Rome, du 7 au 14 septembre

1958—Bruxelles, Belgique, en août.

1959—New York

1960—probablement en Espagne

1961—Incertain

1962—Treizième Congrès international; des invitations ont été reçues d'Allemagne et de

France. On fixera l'endroit au cours du Congrès de Rome.

1963—Stockholm, Suède.

8) Associations Nationales acceptées comme membres actifs.

—Bundesfachgruppe für Zahnheilkunde in der Österreichischen Ärztekammer.

—Section de Stomatologie de la Société des Sciences Médicales de la République Populaire Roumaine.

—Section de Stomatologie de la Société Médicale Tchécoslovaque.

—Association Odontologique du Pérou.

**Congrès international de Rome,
du 7 au 14 septembre 1957**

Les dentistes qui se proposent d'assister à ce congrès feront bien de noter les points suivants:

1) Il sera difficile de se loger durant le congrès. On a retenu un certain nombre de chambres pour les membres de l'A.D.C. et on peut les réserver dès maintenant. On ferait bien de se hâter pour demander les chambres pour ne pas être déçus plus tard.

2) On a chargé la Cie Thos Cook & Son d'organiser les voyages et de réserver les chambres d'hôtel pour les membres de l'A.D.C. Déjà un grand nombre de dentistes canadiens ont signifié leur intention de se rendre à Rome et ont déjà fait les arrangements nécessaires. On peut prendre tous les renseignements possibles en écrivant à la Cie Thos Cook & Son, à 97 rue Adelaide ouest, Toronto ou en s'adressant à une succursale de cette agence dans votre propre localité.

3) Les membres adhérents de la Fédération Dentaire Internationale pour 1956 et 1957 pourront s'enregistrer au Congrès pour la moitié du prix ordinaire de l'inscription. Le montant de la cotisation annuelle des membres adhérents est de \$10.00. Le paiement de cette cotisation pour 1956 et 1957 équivaut à peu près à la moitié des frais d'inscription au Congrès. Cependant, en devenant membre adhérent, on reçoit le Journal de la Fédération, qui rapportera toutes les communications qui seront présentées au Congrès et tous les renseignements en rapport avec le Congrès. On paie sa cotisation au docteur Don W. Gullett, trésorier national de la F.D.I., 234 rue St.-Georges, Toronto.

Les traitements dentaires sont-ils assurables?

On discute beaucoup depuis quelques années à savoir si les traitements dentaires sont assurables ou non. Le mois dernier, à la septième Conférence nationale d'Hygiène dentaire, tenue à Chicago, M. C. A. Kulp, Ph.D., doyen de l'Ecole de Finance et du Commerce Wharton de l'Université de Penn-

sylvanie, a déclaré dans une conférence que les traitements dentaires peuvent être classés comme risques d'assurances ordinaires. Il y a évidemment des difficultés qu'il faudra aplanir par l'expérience et par la compilation de statistiques, car, dit-il, "il n'y a jamais de statistiques déjà établies, quand on veut établir un nouveau genre d'assurance. Les statistiques ne sont pas faites pour les assurances; il faut d'abord établir son plan d'assurance et amasser des statistiques ensuite."

Congrès dentaire pour célébrer un centenaire

La Société dentaire de St-Louis célébrera le centième anniversaire de son existence les 25, 26, 27, et 28 novembre 1956. On est à préparer un programme extraordinaire de manifestations. La Société de St-Louis est la plus vieille société locale en existence. Pour tout renseignement, on s'adresse au docteur Val H. Frederick, 8013 avenue Maryland, St-Louis 5, Missouri, E.-U.

Dentiste de Calgary à l'honneur

Le docteur John W. Clay, de Calgary, a reçu un diplôme de membre honoraire de l'Association dentaire canadienne au cours de la réunion de Banff. En lui présentant son certificat, le docteur McIntyre déclara que le docteur Clay avait, sans l'ombre d'un doute, consacré toute sa vie professionnelle au service de sa profession. De plus, il dit que John Clay s'était fait l'avocat de toutes les bonnes causes et que son dévouement avait beaucoup contribué à l'avancement de la dentisterie.

Le docteur Clay naquit à Halifax, Angleterre, et vint très jeune au Canada. Il fréquenta les écoles primaires à Toronto et reçut son éducation dentaire à Toronto également; après ses études, il s'inscrivit à l'Université de Pennsylvanie. Muni de deux parchemins, il s'établit à Calgary, où il n'a pas cessé d'exercer depuis. Il devint professeur honoraire de la faculté dentaire de l'Université d'Alberta et fit partie du personnel médical de l'Hôpital Ste-Croix, de Calgary.

Au cours de sa carrière, il fut l'objet de nombreuses distinctions. Il fut président de l'Association dentaire canadienne durant deux ans et président de la Société dentaire de l'Ouest du Canada, en 1953. Il est membre du Collège International des Dentistes, dont il est actuellement le président de la section canadienne.

Accréditation des Facultés dentaires canadiennes

Le Conseil d'Enseignement dentaire de l'Association dentaire américaine vient de reconnaître officiellement les cinq écoles

dentaires du Canada, à une réunion tenue dans la dernière semaine de mai. C'est la première fois que des facultés étrangères sont placées sur la liste d'écoles approuvées par le Conseil de l'A.D.A. Cette décision fait suite à celle du Conseil d'Enseignement dentaire de l'Association dentaire canadienne qui a accrédité les cinq facultés de notre pays, après une enquête qui a duré six ans. Depuis de nombreuses années, notre Association avait reconnu les facultés dentaires américaines approuvées par l'A.D.A. On a examiné les écoles en se servant des critères dont se sert le Conseil d'Enseignement dentaire de l'A.D.A. Le travail exécuté par la Commission d'Enquête, travail qui a résulté dans l'accréditation des facultés, marque une date d'importance pour l'enseignement dentaire sur ce continent.

Enquête sur la Maladie 1950-51

Le gouvernement continue à publier des rapports sur cette enquête. Il vient de publier le bulletin No 9, qui est intitulé "Relations du volume des soins de santé en rapport avec les groupes de revenus spéciaux." Sur cette question, ce bulletin donne des renseignements intéressants au sujet des traitements dentaires:

Traitements dentaires

Les différences dans le volume des services de santé reçus par les divers groupes de revenus sont les plus considérables dans le domaine dentaire. Le pourcentage des personnes qui ont dit avoir reçu des traitements dentaires, et la moyenne des visites faites aux cabinets dentaires par 1000 personnes sont beaucoup plus bas chez les groupes de petits revenus que chez les groupes de revenus moyens; et ces groupes de revenus moyens accusent des chiffres beaucoup moins élevés que chez ceux de gros revenus.

Seulement 9.1% des personnes de groupes de petits revenus ont rendu visite à un dentiste durant cette année; ceux des groupes de revenus moyens l'ont fait dans une proportion de 14.0%; ceux des groupes de revenus élevés, dans une proportion de 19.3%. Dans tous les groupes de revenus, les femmes ont été plus nombreuses que les hommes chez le dentiste; cette différence s'accuse surtout de 15-44 ans. La proportion des personnes de petits revenus qui ont reçu des traitements dentaires était fort en arrière des autres groupes en ce qui a trait aux enfants de moins de 15 ans. Dans ce domaine, la proportion des groupes de faibles revenus (6.2 pour cent) était seulement la moitié de celle des groupes de revenus moyens (12.2 pour cent) et moins d'un tiers de celle des groupes de gros revenus (21.9 pour cent). Le groupe des

petits revenus tirait fort de l'arrière dans les groupes d'âges de 15 à 24 ans et de 25 à 55 ans; mais dans les groupes d'âge de 45 ans et plus, la différence était moins grande. On peut relier ces constatations au fait que les jeunes personnes vont chez le dentiste surtout pour des traitements d'ordre prophylactique et que les gens à petits revenus attachent peu d'importance à ce genre de traitements. La négligence à se donner des traitements d'ordre préventif à un jeune âge fait que, plus tard, il y a nécessité de subir des extractions, des traitements d'urgence et des services de prothèse.

La moyenne du nombre des visites au dentiste par 1000 personnes pour les groupes à petits revenus se chiffre à 160. Ce nombre dépasse à peine la moitié de celui du groupe de revenus moyens (302) et à peine le tiers de celui du groupe de revenus élevés. Dans toutes les catégories d'âges de tous les groupes de revenus, les femmes ont fait plus de visites au dentiste que les hommes. Dans toutes les classes des âges et des sexes, le groupe des revenus élevés montre un plus grand pourcentage de visites au dentiste que le groupe de revenus moyens, qui à son tour montre un pourcentage plus élevé que le groupe à petits revenus. La différence était plus grande pour les enfants de 15 ans et moins, où la moyenne du nombre des traitements dentaires par 1000 personnes se chiffrait à 98, pour le groupe de faibles revenus, 238, pour les revenus moyens et 447, pour les forts revenus.

Les personnes qui ont été traitées chez le dentiste au cours de l'année de l'enquête ont fait en moyenne 1,726 visites pour les groupes de faibles revenus. Ce chiffre est moins que l'équivalent des moyennes pour le groupe de revenus moyens (2,076) et celui des groupes à forts revenus (2,283).

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Nouvelles de la faculté de chirurgie dentaire de l'Université de Montréal

Accréditation de la Faculté

Le Conseil d'Enseignement dentaire de l'Association dentaire canadienne avait nommé, il y a six ans, une Commission d'Enquête chargée de se rendre compte sur place des curricula et des disponibilités d'enseignement des cinq facultés dentaires du Canada.

Après plusieurs visites dans les écoles dentaires et après avoir fait certaines recommandations pour améliorer le rende-

ment pédagogique de chacune des universités — lesquelles recommandations ont pour la plupart été mises en force — la Commission d'Enquête vient de conseiller au Conseil d'Enseignement dentaire de reconnaître officiellement la qualité de l'enseignement donné dans les facultés canadiennes.

La faculté de l'Université de Montréal, de l'avis du Conseil, dispense donc un enseignement en tout point conforme aux exigences fixées par l'A.D.C.

*Le Conseil d'Enseignement dentaire de
l'Association dentaire américaine accrédite
la Faculté*

Le Council on Dental Education de l'Association dentaire américaine, après avoir étudié la façon dont s'est effectuée l'enquête dans les facultés dentaire canadiennes et les rapports préparés par la Commission à ce sujet, vient d'accréditer la faculté de chirurgie dentaire de l'Université de Montréal. C'est dire qu'aux yeux de l'A.D.A., notre faculté répond à ses exigences pour prodiguer aux jeunes gens l'enseignement dentaire.

Cet honneur est d'autant plus significatif que seules les meilleures écoles dentaires américaines sont aussi officiellement approuvées par le Council on Dental Education de l'A.D.A.

Vingt diplômés pour 1955-1956

Tous les élèves qui se sont présentés aux épreuves du doctorat ont réussi leurs examens et possèdent maintenant leur titres. Ces nouveaux confrères sont, par ordre alphabétique:

Baribeau, Roger; Boileau, François; Cadieux, Alban; Caron, Laurel; Copnick, Léon; Durand, Jean-Claude; Feinchnelder, Israël; Grenier, Claude; Hébert, Guimond; Koplewicz-Capelle, Michel; Laurin, André; Monette, Raymond; Munger, Yves; Ouellet, Ange-Albert; Plante, Réjean; Poisson, René; Rivard, Pierre; Simard, François; Sincerny, Claude; Vinet, Jean-Guy.

*Certificats de compétence des
cours post-scolaires*

Le service d'orthodontie a décerné un certificat de compétence, en décembre dernier, à trois dentistes, qui y avait suivi les cours durant seize mois consécutifs. Ces nouveaux spécialistes sont: les docteurs Charles Asselin, de Montréal; William T. Campbell, de Winnipeg, Man.; Charles Solomon, de Montréal.

Le service de chirurgie a décerné un certificat de compétence au docteur Léon Majer, de Sao Paulo, Brésil et le service de prothèse au docteur Ferris Acrouch, de Port-au-Prince, Haïti.

Ces certificats s'obtiennent après un stage permanent d'une année dans le service et après avoir rempli certaines conditions, telles que la préparation d'une thèse, etc.

Nomination en dentisterie opératoire

Le docteur Roland Houde, diplômé de la faculté en 1955, vient d'être nommé assistant-professeur dans le service de dentisterie opératoire.

Recherches

Le service des recherches de la faculté continue son travail et, durant l'année, le docteur Georges Perreault a reçu le prix annuel de la Chicago Dental Society pour le travail de recherches jugé le meilleur en 1955. Ce travail portait sur les réactions pulpaire aux obturations.

Cours post-scolaires

La faculté offre encore cette année une série de cours post-scolaires aux dentistes canadiens. Cours portent sur les différents domaines enseignés à la faculté et sont donnés à différentes époques durant l'année académique. Un dépliant bilingue donnant les dates précises de ces cours sera envoyé prochainement à tous les dentistes de la province de Québec.

*Distinction à deux Membres du personnel
de la Faculté*

La Société de Stomatologie de Québec vient de décerner au docteur Ernest Charon, doyen de la faculté de chirurgie dentaire et au docteur Gérard de Montigny, chef du service de chirurgie et d'anesthésie de cette même faculté, un diplôme de membre honoraire de cette Société.

Comités exécutifs de diverses sociétés dentaires de la province de Québec

Société dentaire de Montréal

Président: Vincent Tremblay; 1er Vice-Président: Gilles Baril; 2e Vice-Président: Jean-Paul Lussier; Secrétaire: Adélar Leblanc; Sec.-adjoint: Guy Lachapelle; Aviseur: Roland Gendron; Trésorier: Paul Manseau; Représentant au Collège des Chirugiens-Dentistes de la Province de Québec: Gaston Lajoie; Ass.-trésorier: Jean-Paul Lemieux; Conseillers: Gérard de Montigny; Léon Carpentier; Clarence Bouillon; Marc Thibault; Directeurs: Roger Charette; Antoine Raymond; Florent Terriault; Louis Lépine; Raoul Eugène Lussier.

Société dentaire des Cantons de l'Est

Président: J. Désilets, Danville; Vice-Président: G. Fortier, Sherbrooke; Secrétaire-Trésorier: C. Goulet, Sherbrooke; Directeurs: C. Tessier, Sherbrooke; C.

Roy, Disraeli; P.-E. Robert, Granby; E. Dubord, Victoriaville; J.-B. Saindon, Drummondville.

Société dentaire des Trois-Rivières

Président: Yves Dufresne, Trois-Rivières; 1er Vice-Président: Gabriel Gascon, Trois-Rivières; 2e Vice-Président: Herman Chatillon, Nicolet; Directeurs: Jean Rinfret, Louiseville; Jacques Dolbec, Shawinigan; Secrétaire: René Millette, Trois-Rivières; Trésorier: Jean Bruneau, Trois-Rivières.

Société dentaire des Laurentides

Président: Roland Nadeau, Ste-Adèle; Vice-Président: Jean Huot, Granville; Secrétaire: R. Lessard, Ste-Adèle; Directeurs: Jules Pagé, St-Jérôme; Guy Lapointe, Ste-Agathe; Charles Roy, Lachute; Aviseur: Pierre Liboiron, St-Jérôme.



Photographie prise au cours des délibérations de l'Association dentaire canadienne, tenues à Banff, Alberta, en juin dernier. De gauche à droite, on remarque les docteurs Don W. Gullett, secrétaire, R. R. McIntyre, président, K. M. Johnson, président-élu.

Journal

OF THE CANADIAN DENTAL ASSOCIATION

Bruxism, diagnosis and treatment*

by DONALD S. MOORE, D.D.S., Hamilton, Ontario.

Bruxism is the term used to describe clenching or grinding of the teeth, either during the day or at night. It usually is a subconscious habit of which the patient is unaware. Bruxism is one of the most important aetiological factors in the production of periodontal disease and in the loss of teeth. From a study of 606 cases the apparent causes of bruxism are as follows:

1. Tension.
2. Habit.
3. Hyperthyroidism.
4. Worry and hurry.
5. Interference in the occlusion.
6. Gastric and intestinal disturbances.
7. Anger.—The Old Testament refers to "weeping, wailing and gnashing of teeth".
8. Occupational.

9. Clenching, in order to keep the mouth closed to overcome snoring or mouth breathing.
10. Inflamed periodontal membranes, which create the urge to clamp down on the teeth.
11. Children with nasal and pharyngeal infections.
12. Heavy metal palates of partial and full upper dentures give the wearer a sensation that the denture is dropping at the distal, so that the patient clenches to overcome this sensation.

Over fifty per cent of the author's patients who have periodontal disease clench or grind their teeth either during the day or night, or both day and night. Robert L. Parrish, head of the Department of Periodontics at the University of Tennessee also stated in personal conversation that the prevalence of the habit is extremely high amongst the patients he sees.

Ninety per cent of the patients who clench their teeth are not aware of doing so. Because most patients are not aware

*Presented at Chattanooga, Tennessee, 13th Annual Seminar, Tennessee State Dental Association, July, 1955.

*Published simultaneously with the Journal of Periodontology.

of clenching or grinding their teeth, it is necessary for the dentist to be constantly on the lookout for bruxism. The following signs and symptoms should make him suspect the presence of the habit.

1. Patients with abnormally well-developed muscles of mastication should always be suspected of bruxism. Although, if they are Slavic or of other European origin and eat foods that require considerable heavy mastication, this would not necessarily apply. (Fig. 2.)

2. McCall's festoons at the gingival margin of the teeth.

3. Worn facets on areas of the teeth that do not touch during normal chewing excursions. This can be ascertained by giving the patient some wax to chew and noting whether he uses short or wide lateral excursions.

4. The luxation of the teeth bucco-lingually under grinding pressure.

5. Rigid type jaw muscles, which make it difficult to retract the cheeks.

6. Recessions.

7. Sensitive root surfaces.

8. Temporomandibular joint disturbances.

9. Loss of the alveolar bone around teeth. Bone loss around the second molars should always make one suspicious of, either, premature contact from an adopted centric, interference in the balancing bite, or more commonly, clenching of the teeth. The fulcrum point is approximately two inches distal from the lower incisors, which means that the greatest pressures can be exerted by the muscles of mastication in the regions of the second molars. This is in accordance with the laws of leverage.

10. The contraction of the masseter or temporalis muscles observed while taking the case history.

The case history often will suggest the possible presence of bruxism, such as: a history of gastric or duodenal ulcers, colitis, bad nerves, difficulty in sleeping, gagging readily, and other conditions that

have tension as an underlying aetiological factor.

11. Teeth that are hyper-sensitive to vitality tests where there are no cavities or fillings present.

12. Pain within the alveolar process.

13. Blanching of the gingival tissues when the teeth are under biting stresses.

The next step is to ask the patient to check to see whether he wakes up with his teeth together, or notices them clenched during the day. The patient usually will say he has not noticed the habit and he is quite sure that he does not do it. It is advisable never to tell the patient he has such a habit, but rather to say, there are symptoms in the mouth that suggest bruxism is present. If the dentist insists that they clench or grind their teeth, some will come back and claim they have just acquired the habit as a result of the dentist's suggestion, and blame him for starting something that previously was not present.

Bruxism may be initiated by the dentist if a filling is left high in centric and the patient tries to bite it into place. The patients sometimes state that when they mention the filling being high, the dentist has suggested that they bite down on it until it is comfortable. Partial dentures which do not quite occlude in centric will create the desire to get the teeth to meet and the habit may be initiated. Rests on partial dentures that are high in centric or lateral excursions can also produce bruxism.

The habit of bruxism during childhood is not ordinarily a destructive process. The alveolar bone during childhood is more adaptive and absorbs the trauma more readily. The child's maintenance and reparative processes are far superior to those of an adult. When bone destruction does occur in childhood, it usually affects the permanent incisors and first molars since these are the first permanent teeth to erupt (precocious advanced alveolar atrophy), and the child usually has St. Vitus' dance (chorea) or some other nervous disease. (Fig. 1.)

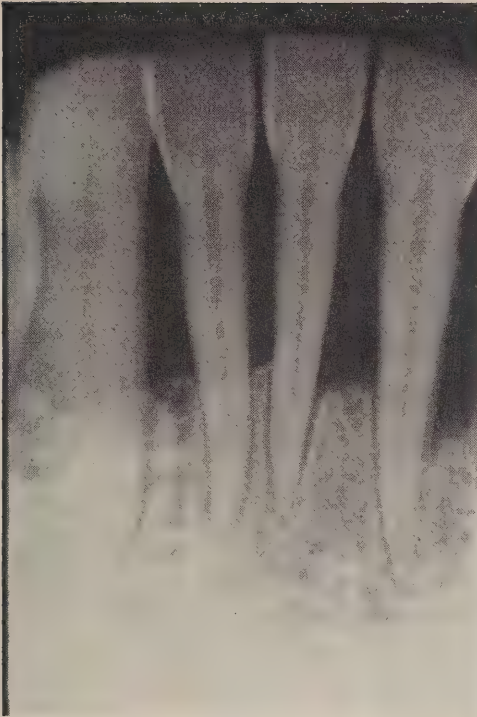


FIGURE 1

18 year old female. Chorea. Clenching. No other systemic factors present.

The damage that results from bruxism for any mouth depends on how much force can be applied by the muscles of mastication and the frequency and duration with which this force is applied. If the teeth wear from grinding so that the interference in the occlusion is eliminated the alveolar bone destruction will be slight or absent. (Fig. 2.) If the teeth drift away from the forces applied, there will also be little bone destruction (Box). This does not refer to the drifting of teeth after the alveolar bone has been destroyed and there is not sufficient bone to hold the teeth in the line of the arch.

When the maintenance and reparative processes of the body become lessened due to age, disease, or, when there are other debilitating factors operating in the mouth, bruxism, which was not severe

enough to cause bone destruction by itself, will then induce the loss of the supporting bone. With some individuals, slight clenching or grinding will actually produce denser, more heavily calcified bone, while with other patients, clenching is so severe that the observant dentist can actually see the tissues blanch when the teeth are clenched. Greater destruction of course, will occur where the stresses are being applied obliquely, than where they are being applied along the axis of the tooth, (axial). The more the muscles of mastication are used, the stronger they become, which is in accordance with Wolfe's law, "Function determines form". Thus, the longer the habit persists, the greater will be the force that can be applied against steadily weaken-



FIGURE 2

Bruxism. Cheek biting. Well worn teeth. No bone destruction except around 2nd molars. Patient lived in Greece until 18 years old. Well developed arches and muscles of mastication.

ing supporting structures. The extra-alveolar arm, that is, the part of the tooth above the edge of the surrounding alveolar bone, will become longer at the expense of the infra-alveolar arm, that is, the part of the tooth supported by bone. Thus the fulcrum point will move apically until the torque will cause even greater bone destruction and marked mobility of the teeth.

All tissues in the body require rest. Clenching overloads and overtires the supporting structures of the teeth and cuts off the circulation. When the forces exerted by the muscles of mastication exceed the physiological limits of tissue tolerance, tissue destruction results. It is most important for the dentist to bear in mind that bruxism is not confined to the natural dentition. The flattening of alveolar ridges beneath dentures is a very common but rarely diagnosed result of bruxism.

Clenching of the teeth is a common occupational habit, particularly for operators of tractors, cranes, bulldozers, etc. It is also common for persons lifting heavy objects; e.g., shipping clerks. Any physical exertion induces some people to tense every muscle in their body, including the muscles of mastication, which are the most expressive muscles in the body. Aggressive businessmen and office workers are as prone to clench their teeth as they are susceptible to develop a nervous stomach or stomach ulcers. Dentists are particularly apt to clench their teeth because of the tensions produced as a result of practising dentistry.

For the fair sex, mothers with young children are especially susceptible, as are single women in their late thirties, with marital intent. During the menopause, clenching is prevalent. The perfectionist or overly-conscientious female usually has the habit. These same individuals complain of tension headaches and tense muscles in the neck.

The treatment of bruxism in the past has not been easy. The correct diet, rich

in calcium, phosphorus and Vitamin B and D is important. To quote Dr. Tom Spies from the Special Issue of Nutrition and Disease, Post Graduate Medicine, Vol. 17, No. 3, March 1955, "For many years psychotic changes have been associated with severe pellagra, but we have learned that subclinical and mild pellagra frequently present symptoms which are diagnosed as hysteria, neurasthenia or anxiety states. The study of thousands of cases has shown that these symptoms often have certain characteristics which are useful in an early diagnosis of deficiency disease. They disappear dramatically following specific vitamin therapy only to return eventually if the patient remains on his usual inadequate diet without a supplement", unquote, and to quote again, "The most frequent emotional outbursts are concerned with fear, apprehension, anger, hostility, depression, extreme sensitivity, and general emotional instability. Sometimes these persons appear to have what physicians might call 'simple anxiety states', or the picture may be that of 'anxiety neurosis', or anxiety hysteria. Nearly always such persons have insight, and in discussing what we call their pseudo hallucinations they often state, "It was just my imagination". Almost without exception, patients complain of a poor memory. Saline injections produce no benefit but administrations of thiamine and nicotinic acid result in truly amazing personality changes. Within thirty minutes to twenty hours a timid, apprehensive, shrinking person becomes a smiling and co-operative individual".

Gastro-intestinal disturbances must be overcome with the co-operation of the physician. It is not unusual for adults to have intestinal parasites and their elimination is necessary for successful therapy. Many patients stop the habit when the occlusion is equilibrated, or when the partial dentures are relined and the interference of the rests removed. If metal is to be used in the palate of a full upper denture or in a partial upper denture with free end saddles, the metal

should be *very* thin to decrease the weight of the denture in order to overcome the sensation of the denture dropping. Some dentists prefer a palate of metal mesh and plastic to reduce this weight.

Tension is the commonest cause of bruxism and this is the most difficult type to overcome, because it requires the co-operation of the patient. All tension is expressed as muscle tension whether it is the result of worry or hurry, fear, frustration, or any of the emotions, and as mentioned previously the jaw muscles are very expressive and are quickly affected by our emotions. A discussion with the patient as to the cause of his tension is of paramount importance. It is necessary to find out why he is building up tension, in order to help him overcome the causes. Not all patients are desirous of help or willing to recognize that their trouble has an emotional background. Also some patients who will accept the fact that their trouble is emotional, will not co-operate in eliminating the cause. Some patients require the aid of a psychiatrist because of guilt complexes or other involved psychological disturbances. It is unfortunate that many of the patients who require psychiatric help are the most likely ones to object to being examined by a psychiatrist. A psychiatrist, who is a highly trained physician, should be seen before mental breakdown occurs, but the misguided public is under the impression that they should only be consulted after a mental breakdown. Psychiatry is a more fearful word to most people than dentistry. From experience it has been found that it is more diplomatic to suggest they seek psycho-therapy from a physician.

Fortunately, most patients are building up tensions due to less complex reasons than those that require a psychiatrist's help. By convincing them to apply logic to their everyday problems of living they can learn to overcome tensions. With some patients, it is a case of discussing their fears and anxiety with a minister trained in personal counselling. In many cases, after the patients have had a

chance to discuss their problems with the dentist, they find they feel much better and their tensions disappear.

The work of Dr. Hans Selye, of Montreal, on stress, has focused the eyes of the physician and dentist upon the effect of such stresses in producing disease. Since his "stress adaption syndrome" was published in 1947, there have been 19,000 articles on stress published in the medical journals. For years many physicians have been suspicious of the effect of stress on the body and Dr. Selye's experiments proved their suspicions to be true.

Breaking the habit of bruxism consists of three phases:

1. A sympathetic understanding of the patient's problem.
2. Teaching the patient how to relax as outlined in various excellent books on relaxation.^{1,2,3,4}
3. Providing the patient with a program for overcoming the tension as outlined in such excellent books as, "The Power of Positive Thinking,"^{5,6} by Dr. Norman Vincent Peale (the best seller of 1952), "How to Stop Worrying and Start Living,"⁷ by Dale Carnegie, and many other excellent books.

Since the habit is subconscious, one can use his subconscious mind in helping to overcome it. This can be accomplished by autosuggestion, using the same principle that one would use if he desired to get up at a certain time in the morning when he did not have an alarm clock or anyone to awaken him. By concentrating on, "I must get up at a certain hour", and planting that idea in his subconscious mind, he would awaken at the desired time because his subconscious mind does not sleep and keeps track of time. The same principle can be used to control bruxism at night, whereby the patient concentrates as he falls asleep, "I must keep my lips together, but teeth apart". For this to be successful, the patient must be given an incentive to overcome the habit, otherwise he would not concentrate well enough or long enough to plant the idea in his subconscious mind. Also for autosuggestion to be effective, the patient should be in a relaxed

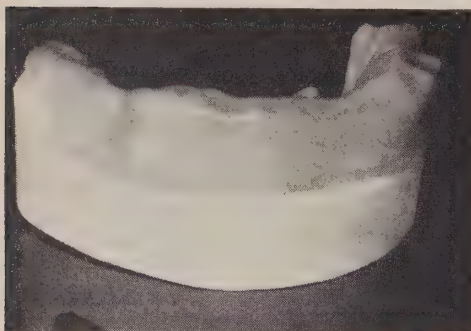


FIGURE 3
Soft rubber or plastic appliance.

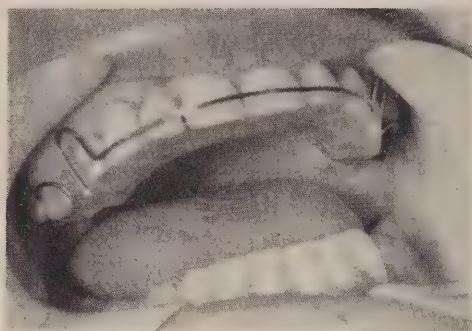


FIGURE 5
Hawley type of appliance.

state, as then the subconscious mind is more receptive to suggestion. Therefore, there are two reasons why the patient must learn a technique of complete muscle and mental relaxation. First, so that he sleeps in a relaxed state, and secondly, so that the autosuggestion will be effective. Most people are under the impression that when they sleep they are completely relaxed, but if such were the case they wouldn't clench or grind their teeth, nor would they wake up with their hands clenched or their shoulder, chest, or leg muscles cramped.

For those patients who are not successful in breaking the habit it is necessary to make an appliance for them to wear at night, in order to reduce the effects of the habit. Different types of appliances are

used depending on each individual case. If it is a case of clenching, a soft rubber or plastic bite positioner (Fig. 3) is made for the lower jaw. This acts as a cushion and prevents the excessive pressures on the teeth and the resultant interference in the circulation to the supporting tissues. Any appliance made must not impinge on the soft tissues and because of caries it should not cover the gingival margins. Any periodontal prosthesis, if possible, should not encroach beyond the free way space. For some mouths it is better to construct clear acrylic bite planes for upper and lower jaw (Fig. 4) that will splint the teeth, prevent the luxation of the teeth, and provide a smooth flat surface.

An appliance similar to a Hawley bite

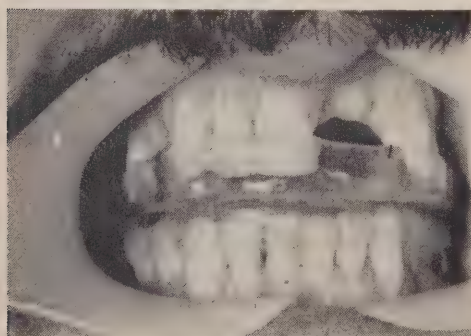


FIGURE 4
Upper and lower splint.



FIGURE 6
In place of Hawley appliance.



FIGURE 7

Open bite.—For posteriors in centric, created by bite opener worn to take the load off the centrals which were loose.

INCORRECT TREATMENT appliance. Clenching depressed the teeth.

plane is useful for those patients with deep overbites (Fig. 5). This allows the lower incisors to slide around on a flat plane. It has the disadvantages that some times where the bite is not closed, the posteriors overrump leaving an open bite in the anterior region. Instead of using a labial wire as in Fig. 5, it is usually better to run the acrylic up onto the labial surface as in Fig. 6, and to cover the occlusal surfaces of the posteriors to prevent their overeruption.

The appliances used to reduce or eliminate the effects of bruxism must be worn as long as the habit persists. Since the

appliances usually do not break the habit of bruxism, it is apparent that they have to be worn every night. It can readily be seen that there is a distinct advantage in motivating the patient to eliminate the causes and the habit of bruxism, rather than resorting to appliances. Also, if the patient clenches or grinds his teeth during the day, it is unlikely that it will be convenient for him to wear an appliance at that time.

It is quite amazing how quickly the patients get used to wearing an appliance. Most patients get so used to them that, if the appliance is misplaced, they feel lost without it. The Hawley bite plane

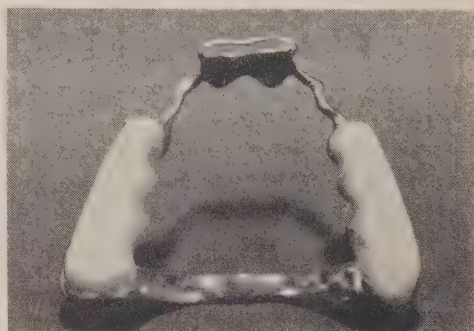


FIGURE 9

An appliance made to take the load off the loose centrals but it impinged on the free way space. It did not help to alleviate the bruxism, in fact it made it worse as well as depressing the posterior teeth.

type of appliance can be utilized to move anterior teeth into the position desired at the same time it is worn for bruxism. Regardless of what type of appliance is made, it is necessary that the occlusion of the appliance be checked most carefully. (Figs. 7, 8, 9.)

CONCLUSIONS

Since successful periodontal therapy depends on recognizing the causes for periodontal diseases and removing them, it is therefore necessary to diagnose and treat bruxism. In so doing, the local factors, as well as the systemic and psychological



FIGURE 8. Appliance in Place.

Posterior teeth depressed by clenching and by improperly designed appliance.

factors, must be considered. Due to the fact that bruxism may produce painful symptoms, the relief of such symptoms is of paramount importance to the patient and dentist.

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The importance of the deciduous dentition in relation to the permanent dentition

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Second Prize Essay—War Memorial Award Competition.

INTRODUCTION

"An ounce of prevention is worth a pound of cure." This time-worn proverb increasingly becomes the direction and aim of the dental profession. It is an admirable and meritorious goal, for in no other way could the public be better served. Prevention, therefore, is the broad, basic theme of this essay.

In order for this preventive type of dentistry to be most effective, it should reach the greatest number of people. Therefore, the essay is directed towards the general practitioner.

More specifically, the subject matter is one of preventive orthodontics which cannot be practised properly by the general practitioner unless he is capable of distinguishing the minor from the major problems. This entails a knowledge of the scientific background to understand the biological growth and development of the human dentition. Once this position is at-

tained, the practitioner must know the normal variations which occur in the physiological development of the deciduous and permanent dentition.

It is precisely these normal variations that are stressed in this essay.

DEVELOPMENT OF THE DECIDUOUS DENTITION

The histological and anatomical investigation of the infantile pattern of dentition development presents a complicated mass of primary and permanent tooth tissue in the bony crypts of the jaws. At a time when the deciduous tooth germ begins to calcify, the buds of the succedaneous teeth are given off. Due to the vertical growth at the superior border of the alveolar process, the deciduous teeth move occlusally.¹

In the normal deciduous dentition there is a total of twenty teeth, ten in each arch: two central incisors, two lateral in-

cisors, two cuspids and four molars. While we must keep in mind the wide range of the normal variation, the deciduous dentition is normally completed between the third and fifth years of age.

The completed deciduous dentition, and the changes which it undergoes until the eruption of the first permanent tooth, have been the subject of much discourse in the field of dentistry. To date, the most scientific contribution of research on this subject has been made by Baume² who studied this growth and development in sixty children over a period of eight years. He brings to our attention some enlightening and pertinent facts.

1. Arch Size

Considering the length of the deciduous arches, Baume³ claims that their sagittal dimensions remain unchanged from four years of age to the eruption of 6*. He also observed that there was no appreciable change in the transverse dimensions, the amount being 0.5 mm. in less than 20%; again, no forward growth of the alveolar frontal sections could be observed in any of the cases during the period of the primary dentition.

2. Spacing

It has been accepted that the greater majority of deciduous dental arches should show a generalized spacing of the teeth. Baume⁴ confirms this, and illuminates further. He states that a study of identical twins clearly shows the presence or absence of spacing to be a hereditary characteristic. Lately, Lundstrom⁵ has reaffirmed this fact. A completed deciduous dentition exhibits either spaced or closed arches. However, one does not develop from the other! This fact is an important contradiction of many standard texts, such as, Salzmann⁶, Strang⁷, and Hemley⁸,

where it was thought that spaces developed in the deciduous arches to accommodate the larger permanent teeth. Since a closed arch will not develop into one with spaces, and since the spaced arch, as Baume⁹ points out, is an average of 1.5 mm. broader, it can be seen where this may have a tremendous influence on the permanent dentition.

The generalized spacing will very frequently have two spaces wider than the others. They are mesial to $\overline{C}$ and distal to $\overline{C}$. These particular spaces are referred to as primate spaces due to an inherent pattern traced back to the more primitive dentitions. Interlocking, long deciduous cuspids are also evidence of a primitive feature.

3. Relationship of the arches

During the period of the completed deciduous dentition, Baume¹⁰ could not find any changes in occlusion. He used the relationship of $\overline{C}$ to $\underline{C}$, and $\overline{E}$ to $\underline{E}$ to check the occlusion between the deciduous arches.

GENERAL CHARACTERISTICS

Other general characteristics of the normal deciduous dentition may be noted¹¹. Most arches exhibit an oval shape and a straight axial inclination of upper and lower incisors. These incisors are almost in an end-to-end relationship. Another important characteristic is the terminal plane. This refers to the relationship of the distal surfaces of $\underline{E}$ to that of $\overline{E}$. More will be said concerning this important aspect.

To this point, a description of the normal variations of the deciduous dentition has been presented. How, then, are the erupting permanent teeth to be accommodated? This will be the subject of the following section.

MIXED DENTITION STAGE

This stage begins with the eruption of the first permanent tooth, usually $\overline{6}$, and ends with the exfoliation of the last deciduous tooth, normally $\underline{E}$, this may span

* From this point on, the deciduous and permanent teeth will be referred to by letter and number respectively, after the Palmer System of Notation. A tooth in the upper arch will have a line under the letter or number. A line above the letter or number represents a tooth in the lower arch. Each letter or number includes both left and right sides.

the period of approximately five-and-a-half to twelve years of age.

Biologically, however, a considerable variance in time and sequence of eruption is disclosed. The physiological growth of each individual shows a different pattern of normal development since environmental influences play such an important role. Willett¹², Salzmann¹³, and McBride¹⁴ have always acknowledged the internal and external environmental influences on the eruption of teeth.

1. *Eruption of the first permanent molar*

To make allowance for the accessional teeth, the first, second and third permanent molars, Baume¹⁵ proves that sagittal growth takes place posterior to the deciduous arches. $\overline{6}$ is normally the first tooth of the permanent dentition to erupt. When the mesial-buccal cusp of $\overline{6}$ occludes in the buccal groove of $\overline{6}$, these teeth are said to be in their normal relationship.

The importance of the terminal plane, previously mentioned, and the presence or absence of spacing in the deciduous dentition now comes to light. Baume¹⁶ observed that at least one of three conditions may exist which will result in a normal relationship of $\overline{6}$ and $\overline{6}$. These are:

- 1) The terminal plane forms a mesial step in the deciduous dentition—that is, the distal surface of $\overline{E}$ is mesial to the distal surface of $\underline{E}$. Therefore $\overline{6}$ and $\overline{6}$ erupt directly into proper occlusion.

- 2) The terminal plane is straight and the mandibular primate space is present. An early mesial shift of $\overline{D}$ and $\overline{E}$ into the primate space takes place upon eruption of $\overline{6}$. $\overline{6}$, therefore, will come into proper relationship with $\overline{6}$.

- 3) The terminal plane is straight and the deciduous arch is closed. Upon exfoliation of $\overline{E}$, a late mesial shift is effected which results in proper occlusion of $\overline{6}$ and $\overline{6}$.

The last condition is true because of the larger mesio-distal diameter of $\overline{E}$ as compared to that of $\underline{E}$. Another very important factor, as Lo¹⁷ reveals, is the eruption

of $\overline{6}$ before $\overline{6}$. Otherwise, due to intercuspal locking, $\overline{6}$ and $\overline{6}$ will move forward together remaining in a possible malocclusion.

2. *Eruption of the anterior segment*

This group of successional teeth includes the centrals and laterals. Lo¹⁸ shows the best sequence of eruption to be $\overline{1}$, $\overline{2}$ and more important, the lower incisors before the upper as the former are the support for the latter. They are accommodated by bony growth and are greatly influenced by the deciduous dentition. Baume¹⁹ made the following pertinent observations:

- 1) During the time of eruption of the permanent incisors, there was a lateral and frontal alveolar growth.

- 2) Inter canine width was greater in maxillary than in mandibular arches, and also greater in previously closed deciduous arches than in spaced ones.

- 3) A stronger lateral growth of the mandibular arch was noticed when $\overline{2}$ erupted. In the maxillary arch, the greater growth was noticed during eruption of $\overline{1}$.

- 4) Forward growth of the arches was not influenced by spaced or closed deciduous arches. However, the average growth of the upper was 1.0 mm. greater than that of the lower arch.

- 5) "Secondary" spacing was sometimes noticed in the undeveloped upper deciduous anteriors. This was due to the eruption of $\overline{1}$.

- 6) Generally, a favorable alignment of the permanent incisors was seen where the deciduous arches were spaced, while the closed arches produced a crowding of permanent anteriors in about 40% of the cases.

As these permanent incisors erupt into position, the appearance may be irregular and disharmonious, therefore, this period of development is often referred to as the "ugly-duckling" stage. However, this is within normal limits. The varying degrees of crowding which occur may be due to discrepancies between arch and tooth size.

3. Eruption of the lateral segment

$\overline{3}$, $\overline{4}$ and $\overline{5}$ make up this segment, and they replace $\overline{C}$, $\overline{D}$ and $\overline{E}$ which maintain the deciduous arch length. Their integrity and proper exfoliation sequence will prevent the lingual collapse of the permanent anteriors, and the premature mesial migration of $\overline{6}$. Therefore, in a normal case where the deciduous and permanent teeth concerned are of average dimensions, the latter will erupt into normal occlusion. It is evident then, that the normal resulting lateral segment is governed by two basic factors, namely:

- 1) eruption sequence
- 2) tooth size — or space.

The first factor, eruption sequence, was thoroughly studied by Lo²⁰. He found that the most favorable eruption sequence in the maxilla was $\overline{4}$, $\overline{5}$, $\overline{3}$, with $\overline{7}$ erupting after these. In the mandible, the order showing the most favorable result was, $\overline{3}$, $\overline{4}$, $\overline{5}$, and then $\overline{7}$. Normal occlusion was usually obtained when this combination was observed in maxilla and mandible. Therefore, the retention or exfoliation of the preceding deciduous teeth is an extremely important physiological change in the mixed dentition.

The space available for the permanent lateral segment is the second basic factor. Since there is a considerable variation in tooth size, the available space will have a wide range. However, this may be estimated by measurements. Nance²¹ pointed this out very clearly by using Black's figures on tooth size. He discovered that the sum total of the mesial-distal crown widths of $\overline{C}$, $\overline{D}$ and $\overline{E}$ exceeded that of the $\overline{3}$, $\overline{4}$ and $\overline{5}$ by 1.7 mm. In the maxilla, this leeway is not as great. If there are spaces between the deciduous teeth, there will be more room in addition.

Today, one may predict with little error, the width required by $\overline{3}$, $\overline{4}$ and $\overline{5}$. There are tables which contain predicted measurements corresponding to a measured available space, or formulae may be used. The merits of such a diagnostic aid in preventive orthodontics cannot be overlooked.

LOCAL ABNORMALITIES

The most important relationship of the deciduous dentition to the permanent dentition has been dealt with—that is, their normal relationship. The normal variations are the very foundation for the diagnosis, prognosis and treatment of the child's dentition. With this basic understanding, any local abnormality will most logically be detected.

While clinicians practise many different forms of treatment for these abnormal conditions, and much could be written concerning these, the limitations imposed upon this essay allow for only a brief mention of the more common abnormalities.

1. Premature loss and ectopic eruption

The premature loss of a primary tooth is simply defined by Kopel²² as, "the elimination of that tooth from the dental arch before its permanent successor is sufficiently advanced in its development and process of eruption so as to occupy the vacated space". The vacated space may, or may not, block out the successor teeth. Friel²³ bases this closure on the tendency of teeth to move forward. The leeway space, if normally present, will influence the amount of closure which can be allowed. Since the leeway is less in the maxilla, the premature loss of $\overline{D}$ or $\overline{E}$ is more serious. Also, the specific tooth lost will influence the amount of closure. Salzmann²⁴ claims that the premature loss of $\overline{A}$ or $\overline{B}$ seldom shows a loss of space, while the same loss in the mandible will almost always cause a tilting and crowding out of unerupted teeth. He also quotes figures from Cohen who shows that approximately 90% of $\overline{4}$ erupt normally, after premature loss of $\overline{D}$. However, with premature loss of $\overline{E}$, he found a 40% space closure! There are many dentists, with much experience, who show figures to the contrary. However, since they all vary considerably, it is evident that each individual case will differ. Therefore, the regular and astute observation of the dentist is required. As a preventive measure, Jackson²⁵ indicates

space-maintenance in the following manner:

- 1) with loss of $\overline{E}$
 - a) indicated up to $10\frac{1}{2}$ years of age.
 - b) indicated after $10\frac{1}{2}$ years if $\overline{7}$ erupting ahead of $\overline{5}$.
- 2) with loss of $\overline{D}$
 - a) indicated if $\overline{2}$ and $\overline{6}$ have not yet erupted.
 - b) indicated if $\overline{6}$ has erupted, but $\overline{2}$ has not.

Ectopic eruption³⁰ concerns the premature resorption of the deciduous roots or even the premature loss of the tooth due to the faulty eruption of the permanent tooth. They can occur with greater incidence in the maxilla and can be unilateral or bilateral. Specifically, $\overline{6}$ erupts ectopically, affecting $\overline{E}$, and the $\overline{2}$ may do the same causing premature loss of $\overline{C}$. These are the two teeth most commonly lost due to ectopic eruption.

2. *Over-retention, submerged molars, ankylosis*

Many theories have been put forward to explain the cause of primary teeth being retained long past their exfoliation time. While no definite cause is known, McBride²⁷ shows that a disharmony between physiological and chronological growth is often evident. Another reason he gives is the presence of a local pathological condition, such as odontomes, or supernumeraries.

McBride²⁸ also accepts the theory of ankylosed deciduous teeth as a condition where the deciduous tooth forms a permanent junction with the alveolar bone during one of its growth stages. Since the adjacent teeth erupt into the level of occlusion, this would also explain the occurrence of submerged molars.

In any event, the over-retained deciduous tooth will cause, as Higley²⁹ states, a temporary halt to the eruption, a buccal or lingual eversion, or perhaps an impaction of the permanent successor.

3. *Caries — faulty restorations*

Brief mention must be made here of caries in the deciduous teeth, and the im-

portance of giving them immediate attention with a properly contacted and contoured restoration. Jarvis³⁰, in his study, discovered that "interproximal caries in the deciduous dentition is a more important cause of loss of arch length than premature loss of $\overline{D}$ and equally as important as premature loss of $\overline{C}$ or $\overline{E}$ ".

4. *Injury to deciduous teeth*

Traumatic injury to a deciduous tooth may affect the proximating permanent successor. Ellis³¹ points this out and illustrates the following manifestations: hypoplasia of the enamel, dilaceration, cessation of root formation, and cyst formation.

5. *Habits*

This subject itself is too vast to encompass here, and yet it is so important that it warrants mention of at least the underlying basic principle. It is known as the Lips-Tongue Muscle Balance³². Once the deciduous teeth erupt, their muscular environment determines their bucco-lingual or labio-lingual position. This environment is composed of the lips and cheeks from the outside, and the tongue from within. Therefore, any abnormal habit interfering with this equilibrium will cause a malposition of the teeth in the deciduous or mixed dentition. This will obviously have its accompanying abnormalities. Some of these habits are:

- 1) mouth-breathing and open lips
- 2) tongue habits — biting, sucking, thrusting, etc.
- 3) sucking habits — thumb, finger, objects, etc.
- 4) posture habits — sleeping on arm or hand under cheek, and resting cheek or chin on hand.

Whatever the form of treatment, the aim is to prevent a malocclusion by restoring a Lips-Tongue Muscle Balance.

SUMMARY

1) The normal variations of growth and development of the deciduous dentition must be well understood before a

proper diagnosis of abnormal conditions can be made.

2) The sagittal and transverse dimensions of the deciduous arches remain unchanged from their completion to the eruption of the first permanent tooth.

3) A completed deciduous dentition exhibits either a spaced or closed arch and one does not develop from the other. The very important primate spaces, which may exist, occur mesial to C and distal to C.

4) The occlusion between the deciduous arches does not normally show any change after completion.

5) The normal occlusion of 6 depends on the presence or absence of primate spaces in conjunction with the straight or mesial terminal plane of E.

6) The eruption of the anterior permanent teeth brings on the "ugly-duckling" stage characterized by irregularity and disharmony. This is a stage in normal eruption which results in proper alignment of the permanent anterior teeth when there was previous spacing in the deciduous dentition. The closed deciduous dentition, however, may produce crowding.

7) The normal alignment and occlusion of 3, 4 and 5 depends on their eruption sequence. In the maxilla it is 4, 5 and 3, and in the mandible, 3, 4 and 5.

8) The available space maintained by C, D and E may determine the normal alignment and eruption of 3, 4 and 5. This may be predicted from tables.

9) The premature loss of deciduous teeth is a most important local abnormality since arch space may readily be lost if that space is not maintained.

10) Other local abnormalities which must always be considered are:

- a) over-retained deciduous teeth
- b) ankylosis of deciduous teeth
- c) submerged deciduous molars
- d) caries in deciduous teeth

e) faulty restorations in deciduous teeth

f) traumatic injury to deciduous teeth

g) habits

CONCLUSION

A knowledge of the normal growth and development patterns of the deciduous and permanent dentitions, and their relationship, is essential in the diagnosis of abnormalities.

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Are apicoectomies necessary?

by ISADORE WOLCH, D.D.S., Winnipeg, Manitoba.

Probably no more controversial issue confronts the dentist who is treating a pulpally involved tooth than whether to use the conservative technique, that is by medication alone, or to perform an apicoectomy. The individual dentist has made his decision on this problem more on the basis of personal likes and dislikes rather than on a scientific diagnosis. This article will attempt to focus attention on the evidence reported by leaders in the field of Endodontics and leave the conclusions to the reader.

In the period since World War II more and more endodontic treatment has been carried out by means of the radical or root resection technique. Without a doubt the main reason for this has been that it is a time saving method. During war time or for out of town patients it must be conceded that time is an important factor. However, where the patient is readily available apicoectomies should only be performed where the conservative technique is contra-indicated.

Dr. L. I. Grossman ⁽¹⁾ claims that 95%



FIGURE 1.

Due to fracture having formed a callous it was impossible to ream or fill to apex.



FIGURE 2.

Wide foramen making it impossible to obtain a hermetic seal.

of pulpally involved teeth can be saved by conservative root canal therapy. He gives the following indications for root resections:—

1. Where there is evidence of detachment of the periodontal membrane.
2. Where the apical portion of the root canal cannot be cleansed, sterilized or filled. (fig. 1)
3. Where a very wide foramen is present. (fig. 2)
4. Where pathologic resorption of the root tip is present. (fig. 3)
5. Where perforation is present in the apical third.
6. Where evidence definitely points to a cyst.

The first five categories are readily diagnosed but the presence of a cyst is not too easily detected. Dr. S. Patterson⁽²⁾ of the Department of Endodontia, University of Indiana, prepared a series of fifteen cases in which resections had been performed. The pathology laboratory had examined and diagnosed the tissues obtained from each case. When the roentgenograms from these cases were shown to dental audiences and even



FIGURE 3.

A. Pathological resorption of root tip.

B. Post-operative view after resection.

specialists in Endodontics, very few could accurately pick out which were the cysts and which the granulomas. Dr. Ralph F. Sommer⁽³⁾ from the Endodontia Clinic of the University reports on a series of cases where histopathologic reports were obtained of the tissues removed during resections. No neoplasm was encountered in any case. He states "The true status of a periapical lesion cannot be determined from roentgenographic evidence alone. When this evidence is supported by negative cultures, we know that with conservative treatment the lesion will respond more rapidly to healing and surgi-

cal interference will not be necessary". Dr. Sommer goes on to describe a study made by Dr. Warren Hedman that clearly shows when infection has been eliminated from within a canal, the periapical tissues become sterile as a result of their own defensive mechanism.

The rationale of root canal therapy can be given no better than by quoting from Boyd's Pathology⁽⁴⁾: If infection is destroyed, attempts at repair begin. If the cavity is small it becomes filled in with granulation tissue, if large a fibrous wall is built around it. Fish⁽⁵⁾ demonstrated that organisms were only present at the immediate area adjacent to the apex of an infected root canal. Around this was an area of contamination, then an area of irritation and finally a zone of stimulation. (fig. 4)

Dr. Paul E. Boyle⁽⁶⁾, pathologist at the University of Pennsylvania, claims that "Chronic periapical inflammation transforms periodontal membrane and bone into granulation tissue. These soft tissue sacs have been called granulomas. The term is a misnomer since they are of inflammatory origin and are not neoplasms. It is this tissue with its newly formed capillaries which repairs abscesses." Therefore if you interfere surgically and remove this granulation tissue you are actually delaying the healing process. After it is removed, new granulation tissue has to be formed which is the precursor of bone.

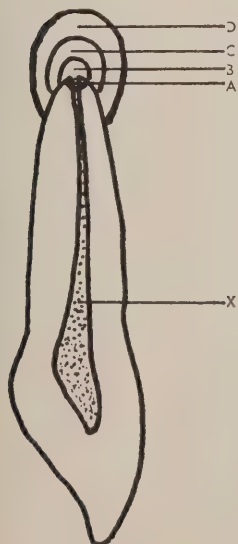


FIGURE 4.

(After Grossman)

—Schematic diagram showing bacteria in root canal and A, zone of infection; B, zone of contamination; C, zone of irritation; D, zone of stimulation; X, bacteria.

Kronfeld ⁽⁷⁾ and Schour ⁽⁸⁾ have reported that granulomas are found sterile in a large percentage of cases. Bender and Seltzer ⁽⁹⁾ in discussing the role of antibiotics in Endodontics claim that large areas of bone destruction are repaired more rapidly than after apical curettage or resection. To use their words "We seldom resort to apical surgery unless the treatment must be finished in one sitting".

If all causes of irritation such as bacterial end products or protein degradation have been permanently eliminated from the root canal, if negative cultures have been obtained and a hermetic seal performed, then in approximately 95% of cases no surgical intervention should be required.

SUMMARY

1. Roentgenographic evidence alone is insufficient for diagnosis.

2. Unless specific contra-indications exist, the conservative technique is the one of choice.

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The dry socket problem*

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DIAGNOSIS AND DEFINITION

No one can describe the pain and discomfort which are experienced in the common affliction known as dry socket, unless he has been the victim. To be sure, many nostrums and pain alleviating substances have been offered, but in spite of this the usual ten days to two weeks of discomfort and pain persist. With this in mind, the literature concerning dry sockets was reviewed in order to find something that would accomplish the purpose of removing this postoperative sequela to extraction.

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A suitable definition for this process is that of Schwarz: "Local necrotic condition of the alveolar process or its septum, which, in the absence of blood vessels, can proliferate neither capillaries nor granulation tissue for the organization of the blood clot, and consequent healing. As the blood clot does not organize, it disintegrates until healthy osseous tissue is reached, then healing commences. Such a necrotic condition of a tooth socket may arise from any chronic inflammation of the pericementum and periosteum of a given socket, which deprived of nutrition, emerges as a dry socket after extraction".

Basically, it is a nutritional disturbance, the end result of vascular damage involving mainly the capillary systems

around individual tooth sockets. Christopher emphasizes this point in his statement that investigators who have based their findings on histologic study and those who have used clinical data are in agreement that interference with the blood clot in the socket is the important factor in failure to heal following extraction of teeth. The loss or interference induces a local osteitis by exposing the bone to infection from bacteria in the saliva or from decaying food that has lodged in the open socket. O'Hearn states that the mucosa adhering to the sharp edges of the bone is the principle factor in post-operative pain, but the majority of operators tend to support the theory of an osteitis of infectious origin; however, such pain cannot originate from this source, even though an osteitis is present.

From a clinical standpoint, bone has no free sensory nerve endings to receive and transmit pain stimuli to the brain. Examination of standard texts is essentially negative as to the sensory nerve supply to bone itself; this is apparently not only true of the mandible and maxilla, but true of all osseous tissue within the body.

The only tissue remaining in the socket containing nerve fibres after removal of a tooth is the alveolar membrane; it is therefore reasonable that the remnants of this membrane contain the nerve elements responsible for the reception and transmission of pain stimuli. Thus when the tooth is removed, the principle fibres of the alveolar membrane are severed leaving viable, very vascular tissue with free nerve endings. If this is not protected by a normal clot, the exposed surface of the alveolar membrane is affected by stimulation to a varying degree of pain sensation; the stimulating factors being mechanical, thermal, chemical and bacterial. The appearance of a dry socket is somewhat varied, but usually the outstanding diagnostic symptoms, objective and subjective, are unmistakably present. At first the clot has a dirty, gray, and foul appearance, and then it falls out.

Suppuration may or may not be present, but there is a foul odor and severe neuralgic pain.

Sometimes the socket wall seems to be closed by normal epithelium except for a very small opening. The excruciating, throbbing pain of which the patient complains, seems out of proportion to the clinical picture. However, careful observation and insertion of a probe through the small gingival opening will disclose an unhealed, necrotic, foul smelling, bony cavity beneath the gingiva. In other cases the socket is wide open and the alveolar bone is exposed in one or more places.

Granulation tissue is lacking. The wound becomes a pocket for debris because the patient cannot rinse such a painful area sufficiently. Small bony sequestra may be present. There is usually no swelling, but the lymph glands are frequently involved and the temperature often is slightly elevated. If the condition is in the mandible the patient complains of an earache which is, of course, referred pain. The symptoms generally set in the second or third day after the extraction of the offending tooth, and last for 10 to 14 days.

DRY SOCKET — SYNONYMS

Other names given to this postoperative sequela are: 1) Necrotic socket—2) Alveolar Osteitis—3) Localized Alveolitis—4) Localized Osteitis—5) Circumscribed Osteitis foci—6) Alveolitis—7) Alveolagia and 8) Epithelialized Socket.

The term dry socket like "trench mouth" and mumps permits the laity to understand what the condition actually is and needs no elaborate explanations. In these crowded days, then, why make any attempt to replace the term dry socket with a more pretentious terminology. Archer recommended that the condition be described as alveolagia. Whether or not this new word is accepted in dental nomenclature, the condition will still be "dry socket" to most patients and dentists alike.

INCIDENCE OF DRY SOCKET

This study of incidence made by Krogh is to attempt to understand better, and to eliminate this troublesome sequel to dental surgery. The term dry socket, as used by Krogh is intended to mean a socket in which the blood clot disintegrates, with the production of a foul odor, without pus formation and accompanied by a severe neuralgia of one or more branches of the fifth cranial nerve, persisting over a period of days.

Procaine was used in all cases. The teeth were not considered in their vitality, neither were they grouped according to the systemic diseases from which some of the patients were suffering.

The majority of the teeth were removed when the patients presented themselves, and many received prophylactic treatment prior to the operation to reduce the oral bacteria. An attempt was made in all cases to work in a field uncontaminated by saliva, with the wound walled off until the socket filled with blood. The patient was then dismissed, the wound having been covered with a dry piece of gauze to be removed after fifteen minutes. Krogh also gave to all cases the same postoperative instruction: that is, to apply an ice-bag to the face for from four to six hours after the operation; to avoid the use of mouthwashes until the next morning, and to take a mild laxative at bedtime. The use three or four times a day, for the following few days, of warm hypertonic saline solution rinses was advised. Patients returned for postoperative treatment until normal healing was assured, or until painful symptoms had subsided.

The work reported covers a period of approximately six years. The cases were routine and consisted of tooth extractions only and were all handled in the office. Patients operated on in clinics, hospitals and schools could not be followed up and therefore are not included. Roots were considered as teeth; deciduous teeth were not included.

Krogh came to the following conclusions:

1. The cases presented are based on the experience of removing 6,403 teeth over a period of six years.
2. All teeth were removed under procaine anaesthesia.
3. One hundred thirty-eight dry sockets developed in 130 patients, 1.2 per cent from erupted teeth and 2.2 per cent from all types.
4. Male and female are equally susceptible.
5. Ninety-five per cent of the dry socket cases occurred in the lower bicuspid and molar sockets.
6. There was a definite correlation between the mechanical difficulty of tooth removal and dry socket incidence.
7. There was no appreciable seasonal variation.
8. In 71.7 per cent of cases, treatment was begun on the second or third day.
9. In 73.9 per cent of cases, treatment was ended between the seventh and tenth day.
10. Infiltration anaesthesia is not a cause of dry sockets.
11. The more adjacent teeth removed at one operation, the less the danger of dry socket development.

ETIOLOGY

The etiology of alveolalgia is, according to several authors, believed to be varied. The following outlines those causes which are thought to be possibly active and predisposing factors:

- a) *Active factor: Dry socket is in reality due to the abnormal alveolar membrane*—the alveolar membrane is essentially a modified form of periosteum derived from the dental follicle or sac and is entirely mesenchymal in origin. It contains the vessels and nerve supply for the paradental tissue and the formative elements of cementum and bone. We can consider the periodontal membrane divided in three portions after the extraction of a tooth: a) *Cemental membrane*—that portion of the fibres remaining attached to the cementum of tooth after extraction. b) *Alveolar membrane*—that portion of the fibres remaining attached to the alveolar walls after extraction of a tooth. c) *Periodontal fibres*—the total fibres as they attach tooth to bone before being severed by extraction.

The local factors of blood coagulation are pertinent to our discussion and may be classified in two general categories:

1. Blood supply as related to socket coagulation.
2. Role of the alveolar membrane as to the stability of the clotted blood following a tooth extraction. The blood supply to a socket has three main clinical sources and a fourth to a lesser degree. They are (in sequence as to volume):
 - a) Periapical
 - b) Alveolar Periosteal
 - c) Gingival
 - d) Intra-Osseous

It is the impression of Mead that a normal physiological clot must have present normal alveolar membrane, in order for the coagulating blood to form a stable clot; it is felt that the union of the blood clot and alveolar membrane fibres form somewhat the same relationship as the tooth and the attaching fibres, in that the alveolar membrane is necessary in both for a stabilizing factor.

What causes the lack of a proper blood clot to form or an apparently stabilized clot to be lost after a few hours? The following should be considered:

1. Trauma to the alveolar membrane with complete or partial injury or loss of this tissue.
2. Pathologic changes in the alveolar membrane.
3. Contraction of the arterioles after removal of tooth either by drugs or mechanical action.

We must realize that any factor may produce a dry socket. For example—trauma will thrombose many arterioles in the alveolar membrane as well as to extend an insult to the periapical arteriole supply, thereby occluding this source. The trauma is usually of such character as to damage also the alveolar bone, thereby preventing a blood supply from this source of intra-osseous arteriolar oozing. The factor of pathologic damage in the alveolar membrane needs little amplification. It is well known that the blood supply from such a source is abnormal, with the character of abnormality varying in proportionate degree to the type and extent of such tissue change.

We also know that drugs such as epinephrine cause a vaso-constriction of the arterioles of the region; further, that a simple infiltration of tissue with any solution produces an ischemia that also causes a decreased amount of blood supply present in the area. Such a factor must be considered especially pertinent as to the blood source from the gingiva. There is yet an-

other factor to consider as to the cause of a clot to disintegrate, aside from the obvious mechanical removal. Literature states that such an action is mainly bacterial.

It is believed by Mead, Richardson and Selfridge that bacteria play a minor role and that the principal cause is the non-union of the remaining nonviable alveolar membrane or blood. In such cases, the blood clot has formed, but it is not stable enough to withstand such mechanical processes that a normal physiological clot can endure. Therefore, these cases easily give up the clot by rinsing, muscle torque, or expectorating.

- b) *Predisposing Factors*—1) *Condensing Osteitis and its role in the production of painful sockets*: There are two main reactions in the bone around the roots of teeth, one a rarefying reaction, the other a condensing. The rarefying reaction is favorable to post-extraction healing, whereas the condensing reaction is unfavorable. The former produces decalcifying changes, with marrow spaces larger than normal; whereas the latter causes the bone to become highly calcified with marrow spaces smaller than normal. The first condition seems to increase the blood supply, and the second to decrease it.

During coagulation the clot shrinks, sometimes it pulls away from the bony socket and cuts itself off from its blood supply, which also permits the ingress of bacteria. In either case, the clot may be destroyed. The coagulating blood, in sockets of periodontally involved or surgically removed teeth, pulls the soft tissue with it as it shrinks, thus keeping the socket sealed and preserving a source of blood supply.

Healing is usually rapid and painless after the removal of periodontally involved teeth because of the character of the tissues supporting these teeth, and the lack of extraction trauma. Such teeth have a thickened periodontal membrane, a reduced depth of bony socket and a partial soft tissue socket wall. The reduced depth of the bony socket and the thickened periodontal membrane make for extraction with the minimum of trauma. The partial soft tissue socket wall, plus the thickened periodontal membrane insures an abundant blood supply to the clot.

The condensing type on the other hand, makes a more unyielding socket wall; which necessitates greater force to remove the tooth and transmits greater trauma to the periodontal membrane and socket walls. In addition the periodontal membrane becomes thinner and tends to become atrophic. Under these conditions, the probability of dry socket development is markedly increased.

2—*Trauma to Socket and Surrounding Bone Structures incidental to the removal of the tooth.* Trauma is undoubtedly an important factor in the production of many sloughing sockets, particularly in those cases necessitating the use of bone burs and repeated application of elevators. The burnishing of the walls of the alveolus, by the passage of an excementosed root will account for considerable frictional trauma.

However, the cases of difficult extractions of impacted teeth, in which some cases are inevitably traumatized, but are not always followed by dry sockets, justifies the presumption that a traumatized socket is not the only etiologic factor, but acts as a predisposing factor.

3—*Infiltration of an Ischemic, Toxic, Acid Drug:* It is the habit of some practitioners to infiltrate the buccal and lingual tissues so full of the anaesthetic solution that tissues turn white.

After the removal of the tooth, the socket does not fill with blood, owing to the vasoconstricting action of the epinephrine. This permits the entrance of saliva, laden with bacteria into the socket. This combination probably does account for some of the dry sockets.

Berger states that he noted a greater occurrence of dry sockets in the days when cocaine was used as the anaesthetic; procaine hydrochloride is one-sixth as toxic as cocaine.

4—*Excessive Use of Mouth Washes:* Gardner has stated that most dry sockets were the result of sucking on clots, and an excessive rinsing of the oral cavity. At the University of Montreal, Department of Oral Surgery, patients are instructed not to irrigate the mouth for twenty-four hours. A compression of the expanded buccal and lingual plates of the alveolar process is performed, and a sterile sponge is placed over the wound to be held in place for at least fifteen minutes.

5—*Curettement after Extraction:* This was a routine procedure after the extraction of all teeth a few years ago. Many postoperative complications resulted from its practice. Nowadays, the use of the curette is justified only to remove granulomas or cysts from the periapical region, or debris that has dropped into the socket.

The curette must be held lightly in a pen grasp during this process — the thin edge of the curette is gently inserted between the soft tissue and the hard, bony tissue, and with a pushing, sliding motion all about the circumference of the granuloma or cystic sac, the soft tissue will be peeled in towards the centre of this pathological cavity in the bone, without creating

unnecessary trauma or predisposing to localized osteitis.

6—*Entrance of Saliva into the Fresh Wound:* This has been considered a possible cause of the development of alveolalgia in those cases that followed the simple extraction of vital teeth; the bacteria laden saliva infected the otherwise sterile socket.

Most writers on the subject quote Schroff and Bartels: Fusiform bacilli and spirochetes have been found in cases of painful socket following extraction; upon the cessation of pain these organisms are no longer observed in smears of exudate from the socket. Clinical and bacteriological findings indicate that anaerobic organisms produce more painful sockets following extraction than do aerobes.

7—*Physical Status of the Patient:* The clinical evidence of this disputed point is confusing. Gardner reported: "A few years ago a study was made to determine the possible relation of the dry socket to the general condition of the patient, and any such relationship was ruled out." The author has records of 689 extractions made for 294 pregnant women, the average pregnancy being seven months, and the oral hygiene much worse than average.

The occurrence of "dry socket in this group appears to be of the same magnitude as in another group in which the general condition of the patients could, on the average, be ruled out as a factor. The investigations of Harden would indicate that when pregnancy influenced the general condition, there should be a low grade of painful sockets. He had suggested that during pregnancy there is a low protein content, but a relative increase of globulin, which is mostly fibrinogen; in the non-pregnant woman there is 0.2 per cent, which rises in the pregnant woman to 0.4 per cent. We should expect then, a more rapid clotting of blood and a firmer, better organized clot, which would be more resistant to break down by infection.

PATHOLOGY

While there is some difference of opinions as to the etiology and treatment of dry socket, the general consensus is that it is a local necrotic condition of the tooth socket, preventing the organization of the blood clot so necessary in healing.

Whether the pathological condition was created before or after the extraction has not yet been definitely determined. It seems quite logical that the periostitis is caused long before the removal takes place—the inflammatory process is affect-

ed by microorganisms that have gained entrance either through a carious and infected tooth, through a pyorrhea pocket or by any other means—the extraction of the tooth only disturbs the inflammatory reaction set up by Nature to fight the invading organisms, resulting in interference with normal healing.

Perhaps a review of Nature's method of tissue repair will give us a clearer conception of what actually takes place following the extraction of a tooth. Several tissues play a role in the healing processes — the epithelium covers the wound and restores the continuity of the oral cavity. The subepithelial connective tissue of the alveolar process proliferates and forms the scar tissue in the wound. The periosteum and the endosteum of the alveolar process furnish new bone and fill the space formerly occupied by the root.

All of these changes have been studied experimentally in animals; these experimental findings, in turn have been corroborated by the histological examination of human jaws, from which teeth had been extracted shortly before death. Extensive experimental work was done by Claflin — he described tissue changes associated with the healing of simple extraction wounds, and infected extraction wounds (dry socket).

Undisturbed Healing of Extraction Wounds — Immediately following the extraction of a tooth, the blood clot fills the empty socket. The blood clot consists of a net of fibrin threads, the meshes of which are filled with red and white blood cells. The gingival tissues, which have lost their support collapse over the wound and form a protective covering for the clot.

In the next few days the clot undergoes a process of organization. The fibroblasts in its periphery divide, and new fibroblasts grow into the coagulated blood. These young fibroblasts with star-shaped extensions are present between the red blood cells in the periphery of the coagulated blood.

By the fifth or sixth day, the epithelium

has grown from the periphery across the surface of the clot and completely covers the wound. Shortly afterward, on the seventh day, the first evidence of bone formation is found along the walls of the alveolar socket. This bone is laid down in delicate trabeculae, which come from the original alveolar bone and proliferate into the organized clot.

Simultaneous with the bone formation in the alveolar socket, is a process of bone resorption along the crest of the alveolus; as a result, the socket is being filled with new bone at the same time that its depth is being decreased, until the newly formed bone has reached the level of the resorbed crest. At first the original cribriform plate can be easily recognized; later however, there are extensive resorptive changes in the alveolar wall, by which the latter is eventually assimilated into the trabecular system of the edentulous jaw area.

Claflin found in young dogs that the sockets are completely filled with bone approximately thirty days after the extraction. In man analogous tissue changes take place, but more slowly; in the dog the various reparative changes occur twice as fast as the corresponding changes in a man.

Disturbed Healing of Extraction Wounds — The changes described so far take place if the wound is allowed to heal without disturbance. Occasionally, however, complications arise, and these are clinically known as dry socket.

As indicated by the name, the alveolus two or three days after the removal of a tooth is empty, or contains debris. The blood clot has disintegrated, and the bony walls of the alveolar socket are exposed, giving the wound a "dry" appearance. This condition is accompanied by pain, sometimes severe and of neuralgic character; the surrounding gingiva is inflamed; a foul odor may be present, and there may be swelling of the regional lymph nodes.

These clinical symptoms usually persist with varying intensity for a week or

ten days, then subside and the wound heals.

Frequently small spicules of bone are eliminated from the wound, or on rare occasions the entire bony socket may be exfoliated. From the viewpoint of the pathologist, a dry socket may be looked upon as a circumscribed osteitis of the alveolar bone, with death of bone and formation of small sequestra.

The immediate cause for the condition is the invasion of the socket by pathogenic microorganisms. Claflin was able to produce dry socket experimentally in animals by disturbing the blood clot and introducing bacteria into the socket.

Some of the dry sockets were treated with drugs; others were left untreated. The alveolar bone in the sockets became necrotic; extensive inflammatory changes were found in the surrounding marrow spaces. Later, granulation tissue began to proliferate from the alveolar fundus and osteoclasts separated the necrotic from the living bone. Finally, the necrotic bone was cast off, the alveolus was filled with granulation tissue.

The granulation tissue is a defensive or reparative reaction of the organism; a typical instance of the development of granulation tissue is the healing of a large, open wound on the body surface. A few days after the epithelium has been lost, the raw surface is covered with a red tissue with an uneven finely granulated surface, from which it derives its name. Soon the entire wound surface is covered by the new tissue, and the epithelium from the margins of the wound begins to grow over it, subsequently granulation tissue becomes transformed into scar tissue.

Granulation tissue is young, very vascular connective tissue consisting of fibroblasts, numerous capillaries, inflammatory exudate cells and occasionally other cell forms, such as giant cells. In a chronic inflammation of the alveolar bone, the fibroblasts in the granulation tissue develop from the periodontal membrane and from the connective tissue of the periosteum and endosteum. Their

function is one of repair and regeneration; they encapsulate the inflamed area, replace lost tissue, and form scar tissue, and ultimately this matrix undergoes impregnation with lime salts becoming calcified into new bone.

This second method of bone repair, which is much slower than the first, is usually painful owing to the inflammatory reaction of the sensitive nerve endings in the alveolar bone. Nature uses it only when she is unable to employ the more efficient clot-organization method of resolution.

PREVENTION OF DRY SOCKET

It is Osterloh's belief that the condition is invariably due to failure to remove, completely, portions of the bony socket which have become sclerosed, owing to an infectious process of long standing or to trauma, chronic or acute. True dry socket results from a condensing osteitis—that is characterized by the formation of new bone which is more dense and less regular in structure than normal.

The consequent diminished blood supply is an important factor in the postoperative complication of dry socket. In cases of dry socket produced by long continued trauma due to malocclusion, a similar picture presents itself, there being both an increase in density and a diminishing blood supply. In those cases resulting from acute surgical trauma, the bone is actually compressed, an artificial sclerosis and strangulation of the vessels resulting in consequent diminished circulation. The latter cause of dry socket differs from the two other causes in that the bone is not preoperatively infected by bacteria nor is it sclerosed. This is the type in which we find that a clot forms immediately after operation, but having once formed, necroses and sloughs out, usually within forty-eight hours.

Surgical Method of Prevention:—The mucous membrane and the periosteum are retracted from the lateral cortical plate of bone, for at least one half the length of the root. The lingual mucoperi-

osteum is retracted at least one third the distance. These flaps are retained in their retracted positions until the operation is completed, care being exercised to avoid any injury to them.

Although this has little to do with the actual condition of dry socket, it is essential that the periosteum be well preserved, so that the resultant bone regeneration may be as complete as possible. Regeneration of bone cannot be effected without a healthy, well-approximated periosteum. Too much stress cannot be placed on the absolute care of the periosteum in any operation where bone is involved.

After retraction of the soft tissues, the lateral cortical bone is removed between one-third and one-half of the root length, while the lingual plate is removed less than one-third the length.

The tooth is next removed—an attempt is made to remove all sclerotic bone surrounding the socket. It should be removed laterally, linguallly, mesially, distally, and apically. In the event that this is not practicable because complete removal of sclerotic bone would destroy the support of the approximating teeth, and denude their roots, as much as possible should be removed and the entire socket should be perforated in all its walls by a small punch. The perforations should extend through the condensed layer into normal medullary bone. Needless to say, a burr should never be used to make these perforations because of the possibility of further bone damage by heat generation. The socket is cleaned of bone debris and fragments, and the tissue flaps are brought together and measured for approximation. There they are trimmed so that the base of the approximated tissue lies on bone. By trimming the lingual flap first, the buccal can be brought to it and trimmed, the periosteal surface of the buccal flap lying on the crest of the lingual plate of bone and in direct continuity with the periosteum of the lingual flap.

This method of approximation permits retention of the position of the flaps after suturing, thereby aiding in primary

union of the flap ends. Ordinarily, interrupted sutures, are placed without tension and left for from three to six days, the time depending on the resultant union. Postoperative roentgenograms will show normal bone regeneration in areas operated as outlined above. In fact, films made several months later will show in the socket area no difference in bone composition from the adjacent region. This is in marked contrast to the case in which an extraction was made with no attempt to remove pathologic areas, the socket outline always remaining and the bone that has regenerated being of a porotic undernourished type.

This poor type of bone that has regenerated, usually, sooner or later, causes trouble of one kind or another, despite the fact that the cause may never be suspected or discovered. In many instances of chronic or recurrent tender areas under prosthetic appliances, sclerotic socket walls and their coexistent porotic content, can be demonstrated. The patient may have many years of unnecessary suffering and never wear dentures satisfactorily.

It would be well if more thought were directed along the lines of prevention of necrotic sockets and less toward methods of palliative treatment with little regard to the retention of focal areas of infection. Failure to remove, preventively, pathologic areas of bone, cannot be offset by the placing of sedative or medicating packs in the wound. As an example, a sulfonamide drug in a dry socket will not eliminate areas of sclerotic bone. Assuming that any benefit, however slight, could be derived from the local use of a sulfa drug in a bony socket and particularly one without blood, it must still be remembered that although sulfonamide treatment is an adjunct to surgical procedures, it most certainly is not a substitute for them.

In conclusion, too much stress cannot be placed on the necessity of good roentgenograms; in many cases it is only

through their medium that the possibility of dry socket can be recognized.

With little effort, a careful evaluation of the roentgenographic and clinical findings can be made, and often a diagnosis of condensing osteitis can be established. When this condition is evident around the roots of teeth to be removed, the danger of dry socket should be recognized and every effort should be made to prevent its development.

TREATMENT

The principle objectives in treating dry socket are to eliminate pain and to promote healing. The accomplishment of these ends has been the basis of innumerable papers and discussions on the subject. Many solutions to the problem have been offered, all based on the acceptance of the theory that it is necessary to use Nature's second choice in socket healing: that is by means of granulation tissue. Practically all thoughts have been directed to the means of reducing the pain while the body defences overcome the infection.

It is the general belief that the elimination of pain by a local obtundent, and the application of an antiseptic are the main requirements in the treatment of this alveolar osteitis.

The wound should first be carefully irrigated with warm saline solution and then thoroughly inspected to make sure that no irritating bone spicule or foreign material is present. After the wound is dried, a dressing is applied containing one of the many drugs in paste or liquid form that have been recommended for this purpose.

Guaicol and eugenol, equal parts, are a well known remedy which is applied on a quarter-inch strip of iodoform gauze, and is changed every day as long as the pain lasts.

Mead recommended gauze with glycerin, guaicol, eugenol and iodine, equal parts, repeated every day until granulation occurs. He also pointed out that sometimes it is necessary to change the dressing two or three times daily in order

to keep the patient comfortable. This is true of all local applications.

Eman used a liquid made up of 40 per cent chlorobutanol in oil of cloves, oil of wintergreen, and oil of cassia, together with benzocaine powder incorporated in the gauze.

At the Oral Surgery Department, University of Montreal, we obtained good results with the following therapy: "the teeth adjacent to the socket are scaled and the wound is irrigated by Potassium Permanganate. This topical antiseptic is used in solutions of 1:5,000 to 1:1,000 and it is a deodorant, germicide and astringent, the action depending upon the concentration. It has marked oxidizing properties. The field is isolated with cotton rolls, and the head of the patient is tipped back to keep the drainage of saliva away from the area.

"The socket is carefully dried with sterile gauze. Care in this step will permit one to do this painlessly. Under a good light, the absence of saliva and debris is confirmed. When the area is isolated, and the wound is cleansed, the alveolus is dressed with eugenol-glycerin equal parts, which is applied on a quarter-inch strip of iodoform gauze. This is changed every forty-eight hours, the socket is washed with potassium permanganate, and the dressing is renewed until healthy granulation begins.

"The dressing placed in the socket should occupy the central portion of the socket, and the top surface of the wound, the parts most susceptible to infection. It is felt that dressings promote healing only because they are an added protection to the vulnerable clot, and this added protection allows organization of the clot to progress without interference from organisms in the mouth."

Kemper uses a light dressing of gauze saturated with a mixture of dentalone (chloretone, oils of cloves, cinnamon and birch) and ethyl aminobenzoate, the obtundent effect of which lasts for twenty-four to forty-eight hours; then it is repeated.

Gibson recommended Smith's paste

packed into the socket; it is made up of anesthesin, 25 grains, chloretone, 25 grains, menthol, 5 grains, oil of wintergreen, 5 minims, and white petrolatum, 1 ounce. The socket is swabbed thoroughly with a 10 per cent solution of silver nitrate followed by a 3.5 per cent solution of iodine.

Levine recommended the use of a paste, which he said would stop pain instantly, never to return. The pack is renewed only once or twice, and is gradually pushed out of the socket as it fills with granulation tissue. The pack is composed of zinc oxide and eugenol mixed to a semi-solid consistency and molded into a cone which is gently coaxed into the socket. If it is not removed, the pack will eventually be expelled as the socket heals.

THIAMINE HYDROCHLORIDE IN THE TREATMENT OF DRY SOCKET:—Osterloh delivered a paper, based on findings in thiamine therapy in 130 cases of dry sockets. He found that the attendant pain ceases permanently in 69 per cent of cases within twenty to thirty minutes after initial injection of the drug. It is well to compare this percentage of responding cases, with the percentage of cases responding to other forms of therapy used.

The initial injection of 1cc of the drug, used in a concentration of 100 mgs. per cubic centimeter, which is equivalent to 33,330 v.s.p. units, in a physiologic solution of sodium chloride, evidently normalizes the vitamin balance at the site of infection by supplying the lack and raising the thiamine concentration within that time. The solution for best results should be injected into the superior outer quadrant of the gluteus maximus muscle, although the trapezius or biceps brachialis may be used. With this treatment, injections should be made intramuscularly only.

In some cases, when pain has been present for two or three days before therapy is instituted, for better results the injection is best repeated within twenty minutes. If this does not give relief from the pain which has lasted for more than forty-eight hours, which Oster-

loh has found in only five cases of the 130, he advocates then the use of the double injection treatment the following day, preceding the thiamine administration by subcutaneous injection of 1 grain of codeine sulfate.

For an unexplainable reason, if the pain is first obtunded with a narcotic and the thiamine hydrochloride injections are then given at twenty minute intervals, the pain will not return. It seems advisable to give thiamine hydrochloride prophylactically to patients with visibly lowered resistance or with devitalized teeth, for from three to five days pre-operatively. Five mgs. should be given orally each day before surgical procedure is undertaken and 100 mgs. (1 cc of 33,330 units) should be injected an hour or more before the operation.

In his article Osterloh reports that in utilizing this preventive treatment prior to surgical procedure in thirty-eight cases of broken down and devitalized teeth, not one case of dry socket has developed. Thiamine therapy affords complete elimination of pain in a great majority of cases and gives decided relief in every case.

Surgical Treatment of Dry Socket:—According to Bruce there are helpful methods to secure and maintain a good clot:

1. Provide sufficient raw surface on the mucosa. Dry socket rarely occurs in cases of multiple extractions. Although an abnormal haematological condition, localized infection, and trauma incident to the removal of teeth undoubtedly contribute to delayed healing, it is believed that the most frequent cause of trouble is insufficient blood supply to maintain the clot for a sufficient number of days for organization to become complete. Very little is accomplished by carefully protecting the socket from contamination by saliva until the clot is formed, if the clot does not have sufficient raw tissue contact from which to derive its nourishment.

When an extraction wound is left open, the action of the ligamentum circulare at the gingival margin helps to close it. In single extractions, particularly in uni-rooted teeth, it frequently happens that routine forceps delivery leaves the mucous mem-

brane at the neck of the tooth nearly intact. If the soft tissue edge of such a wound is not "freshened" then the clot formed is entirely dependent upon supply through the alveolar bone.

Clinically, Bruce reports to have had rapid healing with less postoperative complications since he has routinely freshened the gingival margin of every isolated socket. This may be accomplished merely by using small gum scissors and cutting off a thin strip of mucosa around the circumference. However, the raw surface can be markedly increased by trimming to produce a serrated margin. This opens more capillaries and small vessels, without sacrificing any valuable tissue, and thus provides a large de-epithelialised surface even in the case of a small socket.

2. Provide for circulation through the alveolar bone:

By study of the preoperative x-ray and by consideration of the age of the patient, one can estimate the problem, that is, the probable amount of vascularity of the alveolar bone. When the lamina dura is abnormally dense, and in older patients when the apical foramina of the roots have nearly or completely closed, there will be very little haemorrhage from the base. The blood will clot, just as it would in a test tube, but there is nothing to induce the clot to become new tissue. In such cases, it is helpful to use a small round drill (No. 5) to puncture the lamina dura in several places and thus create artificial channels to the cancellous bone. This should be done in a buccal or lingual direction and never mesially or distally, to avoid injury to adjacent tooth roots. The drill does not need to penetrate more than two millimeters.

3. Use sutures without tension. Sutures are helpful to promote healing if properly placed. We believe it is a mistake to attempt soft tissue approximation of the buccal and lingual margins in most cases, except where surgical removal of the tooth has resulted in the sacrifice of considerable cortical bone. If raw edge to raw edge contact is attained, healing by first intention too frequently occurs, while the clot filling the socket still needs vital connection with the soft tissue.

An ideal goal is the reduction of the bucco-lingual width of the socket by about one-third, which is sufficient to cover the bony plates and still maintain intimate connection with the clot. The prime function of the suture in such a case is that of stabilizing the wound.

The sutures should never be under tension or cause a slough by strangulation of circulation. If the socket cannot be reduced by one-third its width without using undue

tension in the suture then the flaps have not been undermined sufficiently over the buccal and lingual walls.

A new approach to the treatment of dry socket is presented by Elwell, and is based on the loss or absence of a sound clot. Why not supply the missing blood? If we can furnish a new clot for the alveolus we have the prime factor necessary to change slow healing to swift repair of a normal wound. Dry socket cases vary in degree of infectious involvement. The treatment requires adoption of technical procedures to treat three main groups of cases. The technique for each group is as follows:

1. The non-septic group (no suppuration and no sequestration). This is the most common type of case and the easiest to treat. The wound is irrigated with normal saline solution, the socket is carefully dried with sterile gauze. When the area is isolated with cotton rolls and the wound is cleansed, the alveolus is filled with blood. A rapid and efficient method of obtaining the blood is that employed to obtain blood for Wasserman examinations. It is easy and requires no anaesthesia. All that is required, is the application of a small length of rubber hose comfortably tight above the elbow of either arm, as a tourniquet. The fingers of the arm to be used are flexed rapidly several times. One of the large veins in the cubital fossa is selected, the skin is swabbed with alcohol and a 19-gauge needle attached to a syringe is carefully inserted in the vein. The plunger of the syringe is slowly withdrawn and 2 cc of blood is drawn into the barrel. This amount is sufficient for even the largest socket. After the blood is taken, a cotton swab is placed over the puncture point and the syringe is withdrawn.

The tourniquet is removed and the patient is told to hold the compress over the puncture point wound for a few minutes. No arm dressing is necessary. For those desiring an alternate method, i.e., securing blood from the mouth, a second method may be used.

The area adjacent to the socket is anaesthetized by conduction anaesthesia. Infiltrating the area is contra-indicated as it inhibits free bleeding. Then a small incision is made in the healthy, non-inflamed tissue adjacent to the socket. With a suitable instrument a slight flow of blood into the alveolus is induced. Obtaining blood by curettage of the socket itself is likely to spread any infection present and in actively infected cases, it may produce an osteomyelitis.

The alternative method should not be employed when gum tissue adjacent to the teeth is infected. Everything considered, the method first described has greater advan-

tages. Blood is slowly deposited in the cleansed and dried socket until it just starts to overflow into the mouth. It is of great importance that no saliva come in contact with the area at this stage.

After the blood coagulates, the patient is given instruction to avoid disturbing the clot in any way. He is told particularly to avoid the use of alcohol and mouthwashes, and to avoid vigorous spitting and sucking of the wound. There is seldom any further treatment. Patients reporting the next day usually state that the pain has disappeared, and that the condition of the mouth no longer annoys them.

2. Mildly septic group (slight suppuration with no sequestration). The majority of dry sockets are in the initial stage of involvement when the dentist is consulted.

The patient usually will return when painful symptoms arise. However, some patients come in with mild degree of pus formation at the base of the alveolus.

The standard procedures are used, except that a small amount of sulfadiazine or sulfathiazole powder is placed in the bottom of the socket. Only a small amount of the powder should be used, since filling the socket with sulfa powder often disturbs or destroys the blood clot. The sulfathiazole or sulfadiazine will combat any local infection, and resolution then proceeds rapidly.

3. Septic group (active suppuration with sequestration). The number of cases reaching the stage of socket sequestration is not large. The treatment in this group is the same as for any localized osteomyelitis.

Drainage is essential, and conservative measures should be used. Resolution is not possible until infection is controlled and sequestra have been eliminated. Treatment consists of hot saline irrigations and the use of socket dressings impregnated with a sedative drug.

In treating a suppurating dry socket, the prime object is to overcome the local infection, then wait for the acute symptoms to subside. When this stage has been reached, it is possible to cause rapid resolution by filling the socket with a good blood clot, which will organize and calcify much more rapidly than if healing by granulation occurs.

Thus, even in unusual and severe cases, the principle of supplying the blood clot essential for organization and rapid healing can be employed to great advantage.

SUMMARY

Experience has proven that in the majority of instances little preoperative and postoperative care is being given to

patients following the removal of teeth — the tooth is removed and the balance is left to Nature to deal with as best she can.

We can in a large measure, control or almost completely eliminate all post-operative painful sockets if a few pre-operative diagnostic factors are considered and if the proper manipulation of tissues is carried out in the extraction of all teeth. The removal of teeth is a surgical procedure. The history of all patients to receive oral surgery should be subjected to clinical and x-ray examination of the dental arches and their contents.

This examination includes the following: (1) chief complaint, (2) present illness, (3) past history, (4) physical condition, (5) clinical examination, (6) coagulation and bleeding time, and (7) x-rays. With this information, the operator is able to tell the patient of his diagnosis and prognosis for surgery. If the previously mentioned findings indicate that there should be further examination, the patient is referred to his physician for a complete check-up and any necessary blood chemistry or laboratory test. Any degree of oral surgery may terminate in a dry socket if the findings reveal anaemia, diabetes, jaundice, liver, kidney or heart damage.

Locally the dentist should provide for the following:

1. Performing surgery in a clean and prepared mouth.
2. Scaling and preparation of teeth before applying forceps.
3. Use of minimum force to remove teeth from their bony crypt.
4. Careful surgical procedure avoiding undue trauma or risk of infection.
5. Sharp dissection of mucoperiosteum to provide for sufficient exposure and to prevent traumatic retraction of soft tissue and consequent denudement of the bone.
6. Debridement after removal — removal of all sharp spicules of bone.
7. Insuring the formation of a clot in the socket after extraction.

8. Avoidance of excessive rinsing, smoking or use of alcohol immediately after the extraction.
9. At least one appointment is given for postoperative examination.

ACKNOWLEDGEMENT

At this time I wish to express my gratitude and appreciation to Dr. Gerard de Montigny and Dr. Antoine Raymond for their teaching, guidance and for their spirit of friendliness, interest and cooperation during the scholastic year; it has been of great significance for the author.

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Why We Need A Dental Health Program

If everyone has access to his family dentist, it would be logical to ask why a need exists for a dental health program. A partial answer to this question may be found in the following points:

1. Dental services are not universally available to all persons who need them.
2. Many persons who need dental care do not seek it, even when it is available. They must be reminded of its importance and coaxed to get it. This requires constant public health education.
3. Good dental care in children which is vital to good dental health in adults, is still relatively a scarce commodity. To put it another way, too many children are not receiving adequate dental care.
4. Many communities have not taken advantage of the reduction of dental caries in children which may be achieved by adjusting the concentration of the fluoride ion in the public water supply.

If none of these conditions exists in a community, a dental health program would be superfluous, but if any does exist, we as professional men should take cognizance of them.

Henry A. Holle, M.D.
Journal, American College of Dentists, June, 1956.

ABSTRACTS



Diagnosis of Lesions Associated with Dentures

by HAMILTON B. G. ROBINSON, D.D.S., M.S., Ohio.

Journal of the Southern California State Dental Assoc., July 1956.

Oral cancer accounts for over one-twentieth of all cancer deaths. The rough visual inspection is the first requisite in examination of the dental patient. This is preferably accomplished with the aid of tongue blades in good light. The mouth should be sprayed with a detergent type solution to remove loose debris before this inspection. The mouth mirror may be used as an aid after this gross examination which includes the lips, tongue (with its base), buccal and labial mucosa, palate, floor of mouth, gingiva and teeth.

Palpation with two fingers (or both hands as in examination of the floor of the mouth and parts of the cheeks) may disclose hard, soft and fluctuant masses. Induration of a lesion leads to a suspicion of malignancy. The nodes of the neck should be included in this phase of the examination.

Radiographic examination is essential to aid in discovery of lesions within the bone and to aid in determining the extent of soft tissue lesions in the region of the bone.

Biopsy is essential to complete the diagnosis of any suspected neoplasms but should not be considered only as a "cancer test". Biopsy should be used for any lesion which cannot be fully identified by other means.

Dentures are carefully constructed to function with minimal tissue stress. The

tissues under dentures, in particular bone, are subject to constant change due to local and systemic factors and aging. Even well designed and fabricated dentures require rebasing, adjustment or replacement in varying periods of time, depending in large part on the biologic reaction of the patient's tissues.

Denture hyperplasia may result from dentures that move on their base, from dentures impinging on soft tissues or from deep, "relief" type, recesses in the tissue borne surfaces. These hyperplasias are almost always benign.

Ulceration may appear as a more or less acute lesion in particular where the denture borders press deeply into the tissues. Ulcers are signs of trauma and should be treated by removal of the irritant.

Hyperkeratosis may be observed in regions of low grade chronic trauma, in particular at the denture border. The lesions may vary from mild keratosis to leucoedema to frank leucoplakia with more severe reaction. Removal of the irritant is important.

Any of the stomatitis found in patients with natural teeth may be found in edentulous patients. The dentist must be alert for the symptoms of these lesions.

Denture patients often reduce intake of vitamins and protein-rich foods before surgery due to discomfort associated with

periodontal disease or pulpal involvement. After surgery the lack of teeth may impair food intake and even after denture construction the patient must learn to eat with a new masticatory apparatus. All of these factors may contribute to primary nutritional deficiency.

The patient's diet should be supplemented during this period and the patient

should be observed for any symptoms of nutritional deficiency.

The dentist has the responsibility of diagnosis, prevention and treatment of lesions in the denture patient. Some of the lesions result from the denture "out-living" its usefulness in the particular mouth, while others are not related directly to the denture.

Psychosomatics in Orthodontics

by JOHN WILLIAM JANUARY, D.D.S.

American Journal of Orthodontics, August 1956.

The psychosomatic concept postulates the inseparableness of mind and body; the wholeness of the individual; the idea that the bodily state may be influenced by that of the mind, just as the mental state may be influenced by that of the body.

Investigators have shown evidence that the psychosomatic principle, working through the autonomic nervous system, can be a factor in dental disease.

Psychiatrists maintain that a dento-facial deformity, because it distorts the body image, can cause psychic trauma leading to dysfunction of the personality structure and altered behavior pattern.

To recommend that orthodontists adopt

the psychosomatic viewpoint is not to urge them to practise psychiatry. Psychosomatics is an adjunct to orthodontic diagnosis and practice, nothing more.

Psychosomatic orthodontics is good orthodontics because it integrates the trinity of component factors in orthodontic practice: mechanics, physiology, and psychology.

Adoption of the psychosomatic viewpoint of the wholeness of the individual, with its emphasis on the human equation, will give orthodontists a deeper understanding and a happier relationship with their patients and a greater personal satisfaction in their professional role of furthering human happiness.

Quantitative Evaluation of the Effect of Toothbrushing and Toothpicking.

by TORMOD MORCH, D.D.S., Ph.D., and JENS WAERHAUG, D.D.S., Ph.D.

The Journal of Periodontology, July 1956.

In 4 persons, aged 27 to 48 years, saliva samples (6 ml.) were collected successively before oral hygiene, during toothbrushing, during toothpicking and after oral hygiene. The samples were kept at 37°C and stirred in a beaker until the excess of carbon dioxide had escaped. To 5 ml. of each sample was added 1 ml. of a 50% sucrose solution and the drop in pH was estimated by a glass electrode: immedi-

ately after the addition of the sucrose and after ½, 1, 2, 3, and 4 hours. A rapid drop in pH was observed in all the toothbrushing and toothpicking samples demonstrating that acid producing bacteria had been removed from the teeth. The acid producing capacity of the toothbrushing samples was greater than that of the toothpicking samples, indicating that most of the bacteria is removed by the

brush. However, the considerable drop in pH in the toothpicking samples shows that some other implement (toothpick or dental floss) is essential for a fully effective oral hygiene. The drop in pH increased with increased time since last oral hygiene, showing that the accumulation of bacterial plaque to a certain extent is proportional to the length of time since oral hygiene.

The efficiency therefore of toothbrushing and toothpicking can be evaluated quantitatively by the fermentation capacity of saliva samples collected during these procedures. The main part of the

bacterial plaque on the teeth can be removed by toothbrushing.

In areas inaccessible to the toothbrush there will always be some bacterial plaque left, that can only be removed by the toothpick (or dental floss) which demonstrates the need of toothpicks for a satisfactory oral hygiene. The bacterial plaque is quickly renewed after oral hygiene.

The amount of bacterial plaque accumulated on the teeth is to a certain extent proportional to the length of time without oral hygiene. The teeth should be brushed twice a day and toothpicks used once every day.

Use of hyaluronidase for extractions in patients requiring immediate dentures

by FRANK C. CAROTHERS, D.D.S., Garnett, Kan.
Journal of Oral Surgery, April 1956.

Hyaluronidase, an enzyme derived from testicular extract, is what is termed a "spreading factor." By temporarily liquefying the natural barriers, hyaluronidase opens pathways in the tissues for freer diffusion and consequent absorption of fluids.

Anterior teeth were extracted, usually from both jaws, in 62 patients, 61 under local anaesthesia and one under general anaesthesia. Hyaluronidase was added to the local anaesthetic, or infiltrated about the teeth when a general anaesthetic was used. In the majority of the patients, antibiotics were administered one hour before and 24 hours after the operation. Sedatives were administered if necessary. A control series of 31 patients was also studied.

Anaesthesia was rapid in onset and of adequate duration. Less of the anaesthetic solution was required in the control patients. Immediate swelling, ballooning and distortion of the face and

oral tissues were almost completely eliminated; there was no postoperative oedema or haematoma, and no pain, or very little, in most instances. Healing time was noticeably reduced. Snugly fitting dentures were inserted immediately, with little irritation of the gingiva or stiffness of the lips or face. On examination 24 hours later, there was little tenderness and the mucous membranes appeared normal. In no instance was it necessary to grind away the dentures in the early postoperative period.

In the control patients, postoperative swelling developed immediately in 90.3 per cent and was present in 100 per cent 24 hours later. Intraoral haematomas occurred in 93.5 per cent, pain and trismus in all, and pressure ulcers developed in 90.3 per cent of these patients during the first 24 hours.

Hyaluronidase should be used to prevent complications after extraction of anterior teeth when immediate dentures are to be inserted.

Dental caries susceptibility tests and their significance in dental practice

by A. KRONCKE, D.M.D., and R. NAUJOKS, D.M.D.

International Dental Journal, June 1956.

In contrast to the caries status which is the result of a single examination, caries susceptibility is defined as a pathological process which shows obvious carious changes in the course of a longer period of observation. The diagnosis of caries resistance can only be made if a long term clinical observation has taken place.

Of the various methods considered, the DMF index represents the most customary clinical method, but most of them are unsuitable as they only register the caries status numerically. The exact clinical evaluation of caries susceptibility, however, requires considerable time—1 or 2 years—and therefore does not fulfill the demands of general dental practice.

Caries tests based on bacteriological or biochemical investigations, however, can be considered as a valuable addition to practical methods of diagnosis, if the method is sufficiently easy and the expense in time and money is reasonable and if the results shows a good correlation with the actual degree of caries susceptibility. Of the various caries tests mentioned, the lactobacillus test and with it the well correlated Snyder test as well as the oxygen uptake test deserve serious consideration. Under critical examination, however, none of these various tests can fully satisfy the demands in dental practice. Further studies will be necessary to reach this aim.

Impact of Group Dental Health Care Programs on Dental Society Activities

by RUDOLPH H. FRIEDRICH, D.D.S.

The New York State Dental Journal, Aug.-Sept. 1956.

Organized dentistry has accepted the challenge to provide dental health care programs which will meet the needs of the people in the changing socio-economic pattern. The development of such programs requires effective dental health care agencies within dental organizations. To be effective, these agencies must have the full support of the dental society's resources of manpower, information, communications and budget. The programs and policy recommendations of the agencies should be the result of thorough study and understanding of dental health care problems. They should be sufficiently flexible to adjust to new developments. They should have the approval and support of the society membership. The activities of the agency should include continuing study and development of

plans for increasing the efficiency of dental practice.

The dental society should assist in the development of the resources of the public health agencies so that they, in turn, may provide information on the community aspect of the problems involved in the development of dental health care programs. The dental society should maintain contact with other public or private health agencies whose resources can assist in the solution of dental health care problems.

Organized dentistry which has accomplished so much in developing its professional competence will continue to solve the problems associated with the distribution of and payment for high standard dental health care.

EDITORIAL

Fee splitting—unethical or illegal?

The practice of dichotomy or fee splitting has long been a cause of great concern among professions. The dental profession, fortunately, although it is impossible to say that no fee splitting occurs, has been rather dramatically free from the practice. A check with several of the provincial licensing boards has revealed no instances of reported fee splitting. The recent decision, however, of the Supreme Court of Ontario relating to dichotomy, is undoubtedly a milestone in professional legal considerations, and because of its importance an attempt is herein made to present the salient features of this action.

This case concerns three plaintiffs, all medical practitioners and members of a hospital staff who brought an action against the Board of Trustees and president of the medical staff of the hospital with which they were associated. Specifically the plaintiffs sought relief by way of declarations that the by-laws of the medical staff enacted in 1953 and a later by-law which came about in 1955 and referred to as the Columbus Plan, were ultra vires, invalid, and of no force or effect. Both these by-laws were duly approved by the Lieutenant-Governor in Council as by-laws of the hospital as required by the Public Hospitals Act of Ontario.

The first general by-law states that it is a responsibility of the Medical Executive Committee which, incidentally, is composed of a president and six elected staff members who act as liaison between the staff and the Board of Trustees, to consider information relative to fee splitting. If in the Committee's opinion fee

splitting has been engaged in by a member of the medical staff, then the Board of Trustees may take such action as deemed necessary even to the denial of hospital privileges.

The 1955 or Columbus Plan by-law, which originated in the United States, goes further. This by-law stipulates that any member of the medical staff of the hospital shall not receive from or pay to another physician or surgeon, any part of a fee received for professional services, to the intent that all fees shall be collected and retained by the individual physician or surgeon. This does not affect partnership arrangements. The by-law then stipulates that the staff member's books must be open for inspection by an auditor appointed by the board of trustees and if the physician or surgeon has not complied with the provisions of the by-laws, hospital privileges would be withdrawn.

The General By-Law permits dichotomy "if the division of such fee is clearly indicated on the account rendered the patient." The Columbus Plan by-law, however, prohibits the practice altogether.

The plaintiffs and the group of medical practitioners whom they represented did not say they favoured fee splitting, in fact, no one at the trial had anything kind to say of the practice. The main objectives of the plaintiffs were the terms of the Columbus Plan by-law which gave the auditor of the Board the authority to inspect a medical practitioner's books and the Board itself the right to withdraw the facilities of the hospital.

Mr. Justice A. M. LeBel after hearing testimony which decried fee splitting as

unethical and immoral, and testimony which made it necessary for a hospital to prohibit fee splitting if accreditation were to be obtained and retained, stated that the practice raised a real problem, and the Board was required to deal with it. The question, then, requiring decision was whether the Board in concerning itself with fee splitting exceeded its powers.

The plaintiffs contended that the Columbus Plan by-law could be invoked to deny the privileges of the hospital to any and all medical practitioners who are entitled by law to practice medicine in Ontario. They also stated that the by-law greatly exceeded the authority of the Board, because the hospital trustees had no jurisdiction over the medical profession as such, that power being vested in the licensing board of the province, and hence the Board had no right to discipline a physician or surgeon.

Mr. Justice LeBel, however, pointed out in his judgment that this by-law applies only to practitioners who are members of the medical staff of the hospital concerned and that the Board of Trustees has the authority to appoint the medical staff and to make by-laws or regulations pertaining to the functioning of that staff.

The following quotation is taken directly from the judgment: "What it has done by the Columbus Plan by-law is to say in effect to all members and prospective members of its medical staff; 'You will be entitled to the privileges of using the hospital but the privilege is subject to two conditions; first, you must not split or divide fees, and second, you must permit our auditors to inspect your books so that they may make reasonably sure that you do not. Unless you agree to be bound by these conditions, you cannot be a member of our medical staff and you must forgo such privileges and uses of the hospitals as membership in that staff entails.'

"That is a positive action on the part of the Board, certainly, but it is regulatory, not prohibitive. Unless the Board can speak in that manner to the members of

its medical staff it cannot govern, manage and control the hospital entrusted to its care, in my opinion."

"Nothing was to be gained by simply enacting a by-law declaring that the Board considered the practice of fee splitting in any guise unethical. That had been done in principle already by the Canadian Medical Association, as I have shown. Accordingly it must have been felt that the new by-law needed to have teeth in it. The members of the medical staff had to be disciplined where necessary or the evil could not be combated. After all, and this fact must be emphasized, no one was or is required to seek appointment to the medical staff of (the hospital)."

Mr. Justice LeBel then rendered his verdict: "For the reasons stated I am satisfied that the Columbus Plan by-law is valid and binding upon the members of the medical staff of (the Hospital) and hence the exception contained in the general by-laws in favour of a division of the fees if the same is clearly indicated on account rendered the patient, has been effectively repealed."

It should be pointed out that fee splitting is not a crime under the Criminal Code but this decision now makes the practice illegal. Even before this decision certain precedents were established especially the oft quoted rule laid down by Lord Cranworth in 1854: "No one having duties to discharge of a fiduciary nature shall be allowed to enter into engagements in which he has, or can have, a personal interest conflicting, or which possibly may conflict, with the interests of those whom he is bound to protect."

This decision has been received with mixed feelings. On the one hand all organizations and agencies representing the medical profession deplore the practice of fee splitting but on the other are concerned with the inroads of outside interference and would prefer that disciplinary action taken in this regard should be the prerogative of the official agency established under the Medical Act of the

Province. This latter proposal, however, would pose most perplexing administrative problems for the medical legal body.

Almost certainly, because of the importance of this decision, the case will be sent to the Court of Appeal and finally

the Supreme Court of Canada. Regardless of the eventual outcome in respect to whether or not this Board of Trustees was exceeding its authority, the practice of fee splitting would now appear to be not only unethical but illegal as well.

Book Reviews

A Manual of Oral Surgery. (2nd Edition).

By W. Harry Archer, B.S., M.A., D.D.S. Published by W. B. Saunders Co. Pages: 877. Price \$16.50.

The 2nd edition of this text—"A Step by Step Atlas of Operative Techniques" is an excellent reference for the under-graduate and graduate student and a valuable addition to the office library of any dentist in active practice.

There are 29 chapters each dealing with a specific phase of the surgical problem and with a minimum of cross reference. It is a concise, well organized presentation with the fine text well supported by clear photographs and free-hand illustrations.

The first chapter deals with the minimum essentials for operative conditions and then leads into a discussion of the problems of exodontia and minor oral surgery. The book then progresses to include the more complicated procedures associated with maxillofacial injuries, congenital malformations and neoplastic lesions.

The chapter on the anatomic explanation of pain in and about the oral cavity, with treatment, was very well done.

I was happy to see a very excellent and timely chapter on Antibiotic Therapy which was not included in the first edition. After discussing the clinical use of antibiotics from both a prophylactic and therapeutic standpoint, Dr. Archer continues to discuss the sensitivity reaction as exhibited in the allergic patient. It was satisfying to see that he mentions the use of erythromycin in the treatment of many dental infections, and

although he does not express his personal opinions, he does state that many authorities feel that since erythromycin is one of the few antibiotics effective against the penicillin-resistant staphylococcus—then it should be reserved for this purpose.

There are well presented chapters on the congenital malformations of the jaws and maxillofacial injuries.

The Author concludes with three chapters relating to Oral surgery as practised in hospitals, sterilization, and disinfection, and lastly a chapter on the legal aspects of oral surgery and anaesthesia.

This text is a major revision of the first edition. It is well arranged, freely illustrated, concise and easy to read. A surgical problem is easily located and concisely dealt with. This factor adds to the attraction of the Manual and supports its recommendation as an excellent reference.

J. A. Folkins

Dentistry—As I See It Today—by: A. Leroy Johnson. Published by: Little, Brown & Co. Pages: 54. Price: \$2.00.

The experience of over 50 years of close association with dentistry is drawn upon by the author of this sometime frank appraisal of the dental profession. It makes thought-provoking reading for any dentist concerned with the status of the profession, and its responsibility to the public. Dr. Johnson's later years being concerned primarily with teaching and research, his conclusions and recommendations are naturally slanted in this

direction. In fact, it appears that his concern is too much towards raising the prestige of the profession, rather than to benefits in service of the public.

The problems facing us are stated very concisely in the first few pages:

1. A profession exists to serve the public.
2. We as a profession are too much absorbed by technological procedures.
3. More hands are needed, and there is a necessity of delegating such technological details to those of lesser training, under supervision.

It is a disappointment to find no elaboration of this line of thought in the book, except for a commendable conclusion that dental schools should be more concerned with providing a solid grounding in the sciences and humanities, and less of what one expects from a vocational training institution.

The book is short, well written, and exceedingly stimulating.

Robert Reid

Casualty Simulation—Prepared by: Civil Defence Health Services of the Dept. of National Health and Welfare. Published by: Queen's Printer, Ottawa. Pages: 59 with coloured illustrations. Price: \$1.00.

A booklet prepared by the Civil Defense Health Services, in which many kinds of anticipated

casualties, wartime and otherwise, are graphically portrayed. Professional application of make-up, plus excellent colour photography combine to give a very realistic effect, and make this a highly educational publication for anyone seeking more knowledge of first aid problems. Prime purpose of the booklet is of course to help local groups with the preparation of realistic "casualties" for demonstration and exercises. Besides this, it would seem to have great value if simply circulated through Civil Defense and First Aid organizations, for the excellence of its illustrations.

Robert Reid

Fundamentals of First Aid—prepared by: Robert A. Mustard, B.A., M.D., F.R.C.S. (C). Published by: The Priory of Canada. Pages: 116 with illustrations. Price: .75 cents for hard cover.

Published by St. John Ambulance, here is a completely up-to-date, comprehensive manual on all phases of first aid. The presentation is excellent in every detail. The average dentist (who is called upon to render professional first aid at times) will find something new, and of value, in each chapter. Pocket book in size, and obtainable from St. John Ambulance or the Department of National Health and Welfare. This publication can be recommended without reservation.

Robert Reid

NOTICE

To: LOCAL DENTAL SOCIETIES:

You are invited to make use of the Announcement Page for a chronological listing of your functions. The following information should be provided: Date, Function, Location, Officer responsible and his address.

Address your communications to:

The Editor,
Journal of the Canadian Dental Association,
234 St. George Street,
Toronto 5, Ontario

The Association

National Health Service in Great Britain

R. J. Hooker, L.R.C.P. Lond., M.R.C.S., L.D.S. Eng., President of the British Dental Association, in his Presidential Address at the recent Annual Conference of the B.D.A. summarized the situation of the dental profession in Great Britain, concisely and well, in two paragraphs. In the belief that every Canadian dentist should read them, these paragraphs are quoted in total.

"I think it was a tragedy, however, that the Service at its inception was made a political issue, when it should have been completely free from such bias. That, however, does not excuse any member of the profession, whatever his political leanings, who loses sight of what should be the aim of us all — namely, freedom to prescribe and give the treatment diagnosed as necessary to our patients. As this is of such importance, I feel we are all free to criticize the Service as now operated, especially as we know only too well how many of our colleagues are feeling frustrated, hampered and bitter."

"Experience of working in the Service has proved that there is emphasis on the second-rate. Everyone must have the same standard. It doesn't matter if the standard is not of the highest; unless everyone can have it, then nobody can. There is no allowance for skill, experience or for the amenities provided for one's patients. As all are paid on the same scale, then the man who does best economically is he who conducts his practice in the cheapest possible manner, with the bare minimum of equipment. What a prospect for the future of a profession! Then the interest of the patient cannot be paramount when there is a third party — in this case the State — which has to be considered. The Hippocratic Oath says: "I will follow that system of regimen, which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous." How can you adhere to this when there is this third party which is liable to intervene and say "No" to your proposed course of treatment? One learns elaborate techniques as a student, but they are not, in my experience, used for treatment of Health Service patients. You will be told by the Ministry that these techniques may be used, that they want you to use them. All you have to do is to submit

a special estimate, which, of course, will be referred to Regional Dental Officer. We each know from our own experience what the chances are of getting the estimate approved, just as we know how humiliating it is when we have a try and explain a refusal to a disgruntled patient. Moreover, in a busy practice, there is no time for all this, so you have nothing to do with it—avoiding bureaucracy as much as you can."

Fluoridation in the United States

The residents of Greater Cleveland began drinking fluoridated water on July 2nd. The project serves 1,200,000 persons in a 500 square mile area which includes 60 suburban municipalities. According to information received from the Council on Dental Health, American Dental Association, this brings the number of U.S. communities receiving fluoridated water to 1,257 with a total population of 28,543,799.

Deductible Pension Payments

The British House of Commons has adopted legislation to permit self-employed individuals to set aside 10 per cent of their earned income annually for retirement purposes. A limit of approximately \$2,100 a year is set, with provision for persons 40 years or older to deduct a larger amount up to a maximum of 15 per cent at age 48. At Washington the Keogh-Jenkins bill has been under consideration for some months. This bill now before Congress would permit dentists and other self-employed professional persons to establish their own retirement income plans by placing a limited portion of their income annually into tax-deferred restricted retirement funds. On several occasions the C.D.A. has proposed similar legislation to the Department of Finance. The proposed enactment is similar to existing legislation for employees in industry and corporations. Such amendment to the Income Tax Act would do much to correct the present inequities in the area of pension and retirement plans for the self-employed individual. The action taken

in Great Britain and the pending action in United States to correct this obvious, unfair situation should be inducement for action by Canadian taxation authorities.

*XLIVth Annual Meeting F.D.I.,
Zurich, 28th May—3rd June 1956*

Resolutions adopted:—

1. On therapeutic dentifrices—

"Whereas, there is a world-wide campaign to advertise and promote the sale of so-called 'Therapeutic dentifrices', which on the basis of inadequate scientific evidence, claim to prevent or inhibit dental caries by the addition of certain chemicals, and

"Whereas, this advertising of unsupported claims for prevention of dental disease tends to mislead the public and minimizes the importance of such fundamental measures of prevention as suitable diet, regular dental care, established oral hygiene practices, and other recognized measures to combat dental disease, therefore be it

"Resolved, That member associations are urged to take all necessary steps, in consultation with responsible authorities, to prevent the exploitation of the public in matters of health through the promotion and advertising of all 'Therapeutic dentifrices', the evidence and claims for which are not acceptable to the dental profession."

2. On dental education—

"Whereas, the free exchange of scientific materials, such as films, slides and educational aids, is of the utmost value in maintaining a high international level of information in the profession, therefore be it

"Resolved, that all Member Associations of the Federation Dentaire Internationale be urged to request their respective Governments to adopt or approve the Unesco convention relating to the free exchange of scientific materials."

3. On armed forces dental services—

"It appears necessary to standardize certain parts of dental equipment, in particular all parts incorporating screws and precision mechanics: syringes (pistons and needles), handpieces and contra-angles. The Commission suggests that the FDI ask for a copy of the catalogue of dental equipment of the American Army through official channels, thus enabling it to compare those parts

which are similar and those which need to be standardized.

"The Commission suggests that a representative be requested at SHAPE, who need not be permanent and who could also, if he is willing, be the dental representative at WHO. SHAPE already has a standardization committee, which however, does not deal with dental equipment. The Commission therefore requests that every effort be made to obtain this representation.

"The Armed Forces Dental Service Commission, having heard the very important statement of the representative of the International Committee of the Red Cross, Mr. Schoenholzer, expresses the opinion that the Geneva Conventions of 12th August, 1949, are, under present legal conditions, the best possible instrument for ensuring the protection of the individual in wartime, and more particularly, of all categories of medical personnel. It recommends all Members of the FDI, whether military or civilian, to study these essential texts, and, in case of war, to ensure that they receive the widest and most exhaustive application. It therefore requests the Council of the FDI to make the necessary arrangements with the International Committee of the Red Cross to obtain and circulate as widely as possible the documents necessary for a thorough knowledge of these texts."

Items of Interest Reported at Meeting

1. There are now 49 Full Member Associations.

2. The number of individuals Supporting Members is 3,261.

3. World Health Organization is forming an expert advisory panel on dental health; has approved for 1957 a study group on dental health services for children; and planning an expert committee on dental health to discuss the various matters related to the use of fluorine in the prevention of dental caries.

4. The publication of a world directory of dental schools is proposed.

5. Some 720, representing 27 countries were in attendance.

6. An impressive list of official representatives from international organizations were present including: The World Health Organization; The World Medical Association, The International Social Security Association, The International Committee of the Red Cross, Arpa Interna-

tionale and in addition representatives of Ministries of Health from individual countries.

7. Future meetings:—

- 1957—XIIth Internationale Congress at Rome—Sept. 7-14
- 1958—Brussels, Belgium—August
- 1959—New York
- 1960—Probably in Spain
- 1961—Indefinite
- 1962—XIIIth International Congress—invitations received from Germany and France—to be decided at Rome next year
- 1963—Stockholm, Sweden

8. New National Member Associations accepted as Full Members:

—Bundesfachgruppe für Zahnheilkunde in der Österreichischen Ärztekammer.

—Section de Stomatologie de la Société des Sciences Médicales de la République Populaire Roumaine.

—Section de Stomatologie de la Société Médicale Tchécoslovaque.

—Asociación Odontológica del Perú.

Correction

In the last Association News the Toronto address of Thos. Cook & Son was given as—97 Adelaide Street W., which should have read 94 Adelaide Street W.

Committees and Councils

Dental Public Health

The various Provinces are more and more taking a greater interest in National Health Week. Ontario has been leading the way for the past few years, then Alberta followed suit, and for the last three years has put on splendid programs of a week's duration. This year British Columbia and Manitoba have also arranged week long programs, and spent a great deal of time and money in order to make them successful. They are using the press, radio and television, besides pamphlets, lectures, etc., to emphasize the importance of dental health.

This year we should like to suggest that a National Dental Health Week be planned by all the Provinces. We feel if all the Provinces supported a plan of this kind that it would prove of great benefit to the public and profession.

By the great number of news clippings we receive on dental public health it is apparent that the press is realizing the importance of dental health, and that the reading public is greatly interested. Fluoridation has once again received a large amount of favourable publicity.

Most of the Provinces are improving and expanding their dental public health programs with gratifying results. However, some of these programs are being curtailed because of lack of personnel.

A number of radio scripts obtained from the American Dental Association, and the Alberta Dental Association were reviewed and revised as we thought necessary for Canadian distribution. We would like to express our thanks and appreciation to the two organizations.

A new pamphlet prepared by this committee entitled, "Your New Dentures" is now ready for sale at a nominal cost. We would advise all dentists providing prosthetic service to obtain a supply of these pamphlets and give one to each of their denture patients. We feel by doing so, many of the misunderstandings that have arisen between patients and dentists in the past will be eliminated. More satisfied patients should result.

During the past three years there has been considerable diversified opinion among our members engaged in public health activities, as to what constitutes the policy of the Canadian Dental Association in respect to Dental Public Health. They requested that a revised policy on dental public health be made available. At the last meeting of the Board of Governors of the Canadian Dental Association a new Policy of Dental Public Health was adopted, and appears on the following two pages. A. Poyntz, Chairman.

DENTAL PUBLIC

The need for dental care arises from the high prevalence of tooth decay, diseases of the supporting structures of the teeth, abnormalities of dental-facial growth and development, and malignancies of the mouth.

These conditions are largely preventable and where not preventable by the use of present knowledge, they lend themselves to early diagnosis and treatment.

Progress in the discovery and improvement of preventive and treatment measures, depends upon the increase of knowledge through research.

The Canadian Dental Association affirms that Public Oral Health Programmes to combat oral disease:

- (a) Should be organized and conducted in a systematic manner.
- (b) Should be based upon research and prevention and upon the control of presently non-preventable disease by early detection and prompt treatment.
- (c) Should motivate members of the community to assume personal responsibility for oral health and to that end should carry on continuous dental public health education.
- (d) Should function as an integrated part of the overall community health program, and under the supervision and direction of a dentist, who, wherever possible should be trained in public health.

Therefore, the Dental Public Health Policy of the Canadian Dental Association shall be:

- (1) To encourage further dental research.
- (2) To encourage and assist in prevention by:
 - (a) Intense and continuous health education throughout the community, with particular emphasis on the importance of those preventive measures which can be performed only by the individual himself, or as a member of his family group.
 - (b) The use of those preventive measures which can be provided through community organization, such as fluoridation.
 - (c) The use of those preventive services which can be rendered by the dental profession and its auxiliaries, such as topical fluorides.
- (3) To encourage the early diagnosis and systematic treatment of those conditions which cannot be prevented in the light of present scientific knowledge.
- (4) To encourage the establishment of adequate facilities for the training of dentists and dental auxiliary personnel and to seek their more effective utilization in health programs.

HEALTH POLICY

Explanation of Policy

I—The foregoing statement of policy is predicated upon the present knowledge of what can be done to prevent and control tooth decay, dento-facial abnormalities of growth and development, periodontal disease, and oral malignancies. There can be no doubt that the public can best be served through the constant growth of that body of knowledge by scientific research.

II—The dental profession recognizes its responsibility to convey to the public directly, and through organized public health channels, and all other agencies interested in the health education of the public, any such knowledge that may be effectively used in the preservation of oral health and function.

III—Preventive Measures Fall Into Four Categories:

- (i) Those which are the responsibility of the individual, and can be carried out only by him; e.g., a proper routine of oral cleansing, good nutrition and good dietary habits, with particular attention to the avoidance of excessive use of sweet foods.
- (ii) Those which are the normal responsibility of the family; e.g., mouth care of the very young child, good family eating habits, maintenance of good oral health practices within the family group.
- (iii) Those which are the responsibility of the community and can be carried out only through community action; e.g., fluoridation, use of community educational facilities.
- (iv) Those which can be obtained through the dental profession and its auxiliaries; e.g., topical fluorides, regular examination, early treatment.

IV—The orderly introduction and effective integration into a dental health program of the presently known preventive measures would reduce the prevalence of tooth decay to a level where it could be controlled by treatment.

V—The most effective and economical way of controlling the residuum of caries after all presently known preventive measures have been exercised by the individual and by the community, is early systematic diagnosis and treatment, beginning with the pre-school child. Such treatment is also an important preventive measure against malocclusion and periodontal disease.

VI—In order to carry into effect the policy stated above an immediate extension of the facilities to train dentists, dental hygienists and dental assistants is urgently needed. In addition to a considerable increase in dental personnel, along with plans for further increases to keep pace with Canada's growing population there is a need to work towards their most systematic, effective and economical utilization in health programmes.

June, 1956.

Economic Security

Your Home

by E. L. R. WILLIAMSON, M.B.E., B.P.A., F.R.Econ.S., Consulting Economist

I. INTRODUCTION—(*This is the first of a series on this subject*).

"Home" is something which has as many meanings as there are individual points of view: To some it is the centre and altar of life; to others it is merely a "roof over their heads." Even to the scientist viewing the home in detachment, it may have greatly varying significance: To one it is vitally significant aspect of the whole social structure; to another, it is so many "accommodation units"—in the more famous phrase of a government official—for so many head of population.

The late Archbishop of Canterbury, Dr. William Temple, stated the positive side of the general moral and social aspects of the home:

"Every child should find itself a member of a family housed with decency and dignity so that it may grow up as a member of that basic community in a happy fellowship unspoilt by overcrowding, by dirty and drab surroundings, or by mechanical monotony of environment."

"Christianity and Social Order"—p. 103.

The negative aspect, or the result of the lack of a real home was described by the Committee of the Lieutenant-Governor of Ontario on Housing Conditions, and quoted by the late Dr. H. M. Cassidy:

"Bad houses are not only a menace; they are active agents of destruction. The Committee is satisfied from their investigations and inquiries that they destroy happiness, life and health. They destroy morality and family ties. They destroy the basis of society itself

by their destruction of self-respect and their promotion of delinquency and crime."

—*"Social Security and Reconstruction in Canada"*—p. 59.

Another researcher has described the problem in the following terms:

"Once it was said, 'An Englishman's home is his castle'; that statement being intended to convey the thought that the average Englishman enjoyed his home in secure possession, a place where he could order his life to his own taste, a refuge from all of the vicissitudes of the world, a place where even the King could not enter unbidden. Today this no longer is true for the majority of the people even in British countries; for an abode which is not a man's own, and from which he is likely to be ejected by the first recession of his economic fortunes, hardly can be called a man's 'castle'. This insecurity of the home is the gravest insecurity of all; no thought is so disturbing as the thought of the loss of shelter; no material loss such a disaster to the family as the loss of the home."

—*"Freedom from Fear: Can it be Achieved in Canada?"*—p. 59.

From the moral, social, economic, and even political view-points, the family's home deserves the most careful attention: It will influence the entire lives of all members of the family, and the community in which they live as well. Without security and satisfaction in the home, there can be no sound economic security. It will be the purpose of this series to discuss various aspects of the home and something of what can or should be done.

The Provinces

Alberta

At a delightful evening garden party at the home of Dr. and Mrs. Wilfrid M. Blair, members of the **Calgary and District Dental Society** and their wives had an opportunity to bid goodbye to **Dr. and Mrs. W. Ross Upton** prior to their departure for Vancouver.

Dr. Upton recently accepted the position of executive secretary of the British Columbia Dental Association and of the Vancouver and District Dental Society, and Secretary of The College of Dental Surgeons of British Columbia.

He is a native Calgarian and after receiving his early education here was graduated from the University of Alberta in 1942 with the degree of D.D.S. Following graduation he served with the Canadian Dental Corps in the United Kingdom and in North West Europe.

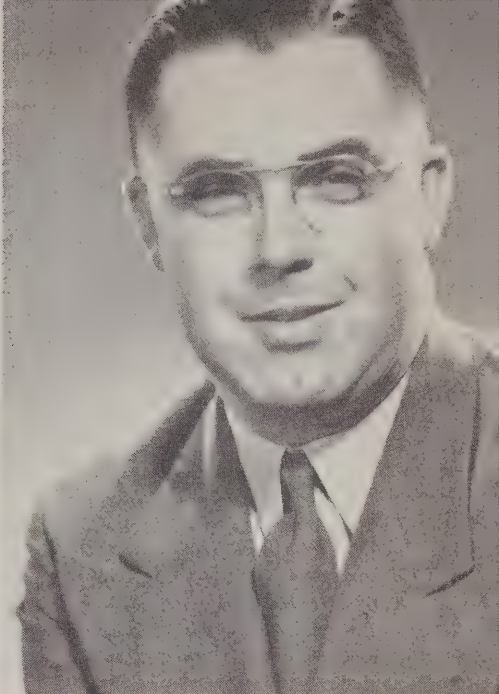
In 1946 he entered private practice in Calgary and soon became enthusiastically involved in society, service club, church and civic activities. He was active in the affairs of the local YMCA and served on the executive of the Canadian Club. During 1949-50 he was president of the Calgary Junior Chamber of Commerce. As an independent candidate for alderman in the 1950 Calgary civic election he led the polls and subsequently served for two years. From 1952 to 1956 he was vice-chairman of the board of the Calgary General Hospital.

Dr. Upton was chairman of the Tourist and Good Roads committee of the Calgary Chamber of Commerce, vice-president of the Canadian Rockies Tourist Association and Director of the Canadian Tourist Bureau.

During the past year he was president of the Calgary and District Dental Society. As chairman of the registration committee of the recent meetings of the Ninth Pacific Coast Dental Conference and of the Canadian Dental Association in Banff, he developed a very efficient system for the quick and accurate registration of those attending.

Dr. Upton was superintendent of Knox United Church Sunday School in Calgary for the past three years.

He, with his charming wife, Irene, and their two daughters, make up a truly fine family which will surely be well received



DR. W. ROSS UPTON, Executive Secretary, B.C. Dental Association, Vancouver & District Dental Society, and The College of Dental Surgeons of British Columbia.

by all members of the dental profession of British Columbia. C. S. L.

Regular golf meets have taken the place of formal meetings of the **Edmonton and District Dental Society** during the summer months. These are held every two weeks and are enjoyed alike by the golf enthusiasts and the golf duffers. We enjoy the privilege of using the courses of the different city clubs.

The new clubhouse at the Mayfair Golf and Country Club is a fine, spacious building and quite caught the eye of the officers of the society. At an executive meeting held recently at the home of Dr. Lane, plans were laid to use the new clubhouse for a dance for members of the society and their wives, on October 12th. This happens to be a week-end when the Grey Cup champions, our Edmonton Eskimos, are not playing a football game, so we expect a good turn out.

Fall activities for many members will start with the refresher course put on by the University of Alberta on September 11th and 12th. Our first fall business meeting, October 2nd, will be addressed by Dr. L. O. Bradley, now of Winnipeg, but formerly director of Calgary General Hospital. His subject will be "The Hospital and the Dentist". This is a timely topic and will merit earnest consideration of all members of the society. G. C.

British Columbia

The tenth triennial **Pacific Coast Dental Conference** will convene in San Diego, California on August 19, 20, 21 and 22, 1957. Participating are the eight western states and Alberta and British Columbia.

Dr. D. J. Sutherland of Vancouver is the first vice-president, and Dr. G. C. Darts is the Councillor for B.C. Appointed to committees are:

- Essays — Dr. R. K. Lindsay
- Clinics — Dr. N. C. Ferguson
- Publicity — Dr. D. H. Munro

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The **Division of Preventive Dentistry**, Provincial Health Branch, has announced that the Director, Dr. Frank McCombie, has accepted an invitation to act as Consultant to the Department of Dentistry, University of Malaya, for a period of one year. This assignment has been arranged under terms of the Colombo Plan. During his stay in Singapore Dr. McCombie will serve as Consultant to the courses in preventive dentistry and dental public health and also plan for the University a programme of Epidemiological Research directed towards the possible factors associated with the dental diseases prevalent in Malaya.

During his absence, Dr. C. W. B. McPhail, Regional Dental Consultant, Fraser Valley, will serve as Acting Director, and routinely visit Victoria for this purpose whilst continuing his duties with the Health Units of the Fraser Valley.

D. H. M.

Quebec

Dr. Vincent Tremblay has been elected president of the **Montreal Dental Society**. Other officers are: Dr. G. Baril, first vice-president; Dr. J. P. Lussier, second vice-president; Dr. A. Leblanc, secretary; Dr. G. Lachapelle, assistant secretary; Dr. R. Gendron, advisor; Dr. G. Lajoie, representative to the College of Dental Surgeons; Dr. J. P. Lemieux, librarian; Dr. G. De Montigny, Dr. L. Carpentier, Dr. C. Bouillon and Dr. M. Thibault, counsellors.

Saskatchewan

The **Saskatchewan public health department** has appointed Dr. Joseph J. Schacter and Dr. J. C. Mitchell honorary orthodontic consultants to the physical restoration division.

Dr. Schacter will assist in developing orthodontic team services in Saskatoon to provide proper care for children with cleft palates or other conditions requiring special evaluation, while Dr. Mitchell will do similar work in Regina.

General News

"The **American Dental Association** and the public health authorities are fully justified in their contention that Dr. (George L.) Waldbott has no proof to substantiate his belief that chronic poisoning has been caused by water fluoridation . . .," a German scientist wrote recently in a letter to Dr. Frederick S. McKay, of Colorado Springs, pioneer fluoride investigator. Commenting on Dr. Waldbott's claim that he had discovered 70 cases of poisoning caused by water fluoridation, Dr. Heinrich Hornung, former professor of medicine at the University of Prague; currently medical public health officer of Kassel, Germany, and author of many articles in the scientific literature on fluorides, said: "On the question of fluoridation, his (Dr. Waldbott's) scientific reasoning is tarnished constantly by an emotional bias." Dr. Hor-

nung also charged that Dr. Waldbott's data was based on "leading" questions included in questionnaires that he distributed. Additionally, Dr. Hornung said that the symptoms listed by Dr. Waldbott as indicative of fluoride poisoning were irrelevant. He pointed out that he had sent similar questionnaires to residents of Marburg, Germany, but had substituted the words, "chlorination" and "chlorine" for "fluoridation" and "fluorine". He reported that 50 per cent of those answering questionnaires "would have been recorded by Dr. Waldbott as established cases of poisoning. . . Therefore, it can be assumed that the positive answers received to Dr. Waldbott's questionnaire are nothing but the product of suggestion by "leading" questions. The 70 cases of chronic poisoning, claimed to be caused by fluoridation, never existed."

The House of Representatives in the United States, Friday (July 13) approved a bill (S.3246) to increase to \$4 million the authorization for the construction of a building to house the **National Institute of Dental Research**. Earlier the Senate had boosted the authorization for the dental research building from \$2 million to \$5 million. The bill now goes to a conference committee of both houses of Congress. The House also approved another research measure, to set up a federal three-year matching grant program of \$90 million for schools of dentistry and medicine primarily, to be used for construction and improvement of research facilities. This bill also goes to a conference committee. A slightly different version of the same bill was passed by the

Senate a year ago. Meanwhile, President Eisenhower signed an appropriations bill providing \$6,026,000 for dental activities, of which \$3,715,000 is earmarked for grants for dental research at dental schools and dental research centres. The bill is now Public Law 635 of the 84th Congress. Passage of the bill to increase the authorization for dental research building was viewed as a major victory for the dental profession. The A.D.A. for several years has urged the construction of a building to house the National Institute of Dental Research. The original authorization of \$2 million was considered unrealistic in view of greatly increased building costs in the eight years since the amount was authorized.

The Corps

In announcing the results of the General Efficiency Competition of the R.C.D.C. Militia for 1956, Brigadier E. M. Wansbrough stated: "An analysis of the results shows that there has been a substantial gain in all facets of the competition by every unit. This is a healthy and praiseworthy sign. The margin dividing the leading units is narrow and the improvement shown by those units which did not win an award augurs well for the keenness of competition in the future. All Commanding Officers are to be complimented on the standards attained."

No. 54 Dental Unit, Ottawa, commanded by Lieutenant Colonel C. E. Woods, was judged winner of the competition, and awarded the Moore Trophy. This trophy was presented by Lieutenant Colonel S. A. Moore, C.D., F.I.C.D., the first Honorary Lieutenant Colonel of the Corps.

No. 50 Dental Unit, Halifax, commanded by Lieutenant Colonel F. C. Fennell, was judged runner-up and awarded the Trelford Trophy. This trophy was donated by former officers of No. 1 Coy. C.D.C. in honor of Lieutenant Colonel W. G. Trelford, V.D., who commanded that Unit as the first to proceed overseas in the Second World War.

No. 51 Dental Unit, Saint John, N.B., commanded by Lieutenant Colonel D. T. Wilson, was judged the unit which made the most progress in general efficiency during the training year and was awarded the Saskatchewan Dental Association Memorial Trophy. This trophy was presented in memory of members of the Saskatchewan Dental

Association killed during the Second World War.

No. 54 and No. 50 Dental Units will also receive the cash awards made by the Royal Canadian Dental Corps Association as winner and runner-up in the competition.

The presentation of trophies and cash awards will be made at the time of the annual meeting of the R.C.D.C. Association in Ottawa this fall.

Colonel C. B. H. Climo, representing the D.G.D.S., attended the meetings of the Northern Ontario Dental Association at Sault Ste. Marie on September 7th and 8th.

Colonel K. M. Baird, Commanding Officer of No. 13 Dental Company, Trenton, Ont., has recently been posted to Ottawa for employment in the Directorate of Dental Services. Lt.-Col. W. M. Sinclair has been appointed Commanding Officer (Acting) of No. 13 Company.

Dr. J. L. Masse of Quebec, P.Q., has been appointed to the R.C.D.C. in the rank of Captain. Capt. Masse received his B.A. from Quebec Seminary in 1940 and his D.D.S. from University of Montreal in 1945. Following graduation he served in the C.D.C. until July 1946 when he entered practice in Quebec City. Capt. Masse has been posted for duty in No. 12 Dental Coy., Halifax. He is married and has two children.

Major L. G. Craigie who recently completed a tour of duty at Whitehorse, Y.T., has been posted to Ottawa.

Captain K. M. Thompson has been released from the Royal Canadian Dental Corps.

In Memoriam

William Edward Webber — Dr. William Edward Webber, a prominent Edmonton dentist, died in Edmonton recently, aged 52.

Born in Montreal in 1904, Dr. Webber moved West with his parents to Marsden, Sask. in 1906 and later to Edmonton in 1912. It was in Edmonton that he received his elementary and high school education and on graduating from high school Dr. Webber attended the University of Alberta from 1923 to 1926 and graduated in dental surgery in 1928 from Toronto University; he practised in Lamont for five years and thereafter in Edmonton.

He was a member of Xi Psi Phi Fraternity, Ivanhoe Masonic Lodge, Scottish Rite Masonic Lodge, the Edmonton Shriners, and the University of Alberta faculty of dentistry.

Dr. Webber was also a past president of the Edmonton Optimist Club and the Edmonton Dental Society. He served on the Edmonton Public School Board, and was an elder of Knox United Church.

Surviving are his widow, two sons, Donald and James; one daughter, Brenda, his father, Edward Webber, and a brother, Walter W. Webber, all of Edmonton.

•
Ray C. Shaw — Dr. Ray C. Shaw died recently at Nelson, B.C., aged 55.

Dr. Shaw was one of the originators of water skiing and aquaplaning about 1932. He was past president of the Nelson Ski Club and president of the Kootenay Launch Club.

First president of the Nelson Kinsmen Club, Dr. Shaw was the first member of the club to hold the office of district governor in 1937.

Born in Lafayette, Indiana, he graduated from Portland, Oregon.

Surviving Dr. Shaw are his wife and a daughter at Nelson, a sister in Indiana, and a brother in San Diego, California.

■
Gilbert Boyd Robinson — Dr. Gilbert Boyd Robinson of Virginiatown, Ontario, died suddenly on July 19th, at the age of 39.

Dr. Robinson was born in Parrsboro, Nova Scotia, and received his early education at Cumberland County Academy, Amherst, N.S. He graduated from Dalhousie University Dental School in May 1941. He obtained his B.A. degree from Acadia University in September 1933.

From May 1941 to October 1946 he practised in the Canadian Army; afterwards in Kentville, N.S. 1946 to 1948, and Sudbury, Smooth Rock Falls, Virginiatown, Ontario.

Surviving Dr. Robinson is his wife, Mildred Robinson.

William Wallace Irwin — Dr. William Wallace Irwin, a former Moose Jaw president of the Council of Dental Surgeons of Saskatchewan and ardent sportsman, died suddenly at his home at Mirror Lake, B.C., at the age of 74.

A native of Ontario and graduate of Northwestern University and Evanston and Chicago, Ill., Dr. Irwin practised dentistry in Maple Creek as a student in 1904 before completing his training and settling in Moose Jaw in 1905. He actually registered in the North West Territories before Saskatchewan became a Province.

He organized the Moose Jaw Dental Society about 1911 and was its first president. Dr. Irwin was also president of Moose Jaw's Wild Life park board 10 years, president of the Saskatchewan Dental Society eight years, and a life member.

As well as being a former golf champion of Moose Jaw, Dr. Irwin was also provincial badminton champion and played lacrosse and baseball with the now disbanded Adelphic club of Moose Jaw. He was a riding enthusiast and took part in sulky races on frozen Moose Jaw rivers.

Dr. Irwin was a shiner and belonged to the AF and AM lodge No. 3 in Moose Jaw.

Surviving are his wife, formerly Dr. Marion Powell, two sisters, Mrs. Agnes Graham, Vancouver, and Dr. Mae Retman, in Ceylon, and a brother, Walter, Detroit, Mich.

•
David Henry Dow — Dr. David Henry Dow or Woodstock, Ontario, died suddenly at his home on September 8th.

Dr. Dow received his early education at Mitchell, Ontario, and graduated from the R.C.D.S. in 1907. Though in his 76th year he was still active as the dental officer at the Ontario Hospital, Woodstock. For 33 years from the time of his graduation, he had carried on his own dental practice in Dutton, Ontario.

Dr. Dow was a leading Oddfellow, being a past noble grand of the Dutton Lodge. While in Dutton he was an adherent of Knox Presbyterian Church and of Knox Church, Woodstock. Dr. Dow was also an honorary member of the Royal College of Dental Surgeons.

Surviving Dr. Dow are his wife, Catherine Dow, one daughter, Mrs. Charles R. Hourd, and two sons, Alderman L. E. Dow and Jack M. Dow. There are also two brothers and three sisters.

NATIONAL RESEARCH COUNCIL REGULATIONS GOVERNING GRADUATE DENTAL RESEARCH FELLOWSHIPS

1. The National Research Council offers a limited number of Fellowships for graduates in dentistry. They are designed to provide advanced training and experience in research in one of the sciences basic to dentistry. Fellowships will not be awarded to graduates in dentistry for the purpose of providing practical training and experience in the clinical branches of dentistry.

Dental Research Fellowships are normally tenable at Canadian universities. Special permission to hold an award at an institution outside Canada may be granted to a person who has shown outstanding ability in research if the particular training desired is not available in Canada.

2. Fellowships are open on equal terms to men and women and are awarded to the applicants who are deemed best qualified on the evidence submitted.

3. A candidate must be a graduate of a dental school approved by Council and resident in Canada.

4. An applicant to be eligible for a first award must not have passed the thirtieth anniversary of his birth on March 31st of the year of application, except under special circumstances or in the case of a war veteran.

5. Application for a Fellowship must be made by the candidate to the National Research Council on the official form. He shall submit a complete account of his academic career, including a transcript of his university record. The candidate shall name the institution at which he intends to study and the proposed field of work. At least three recommendations must be submitted from professors or instructors under whom he studied during his undergraduate and postgraduate careers, stating that, in their estimation, he is worthy of training for scientific research.

6. Each applicant must arrange for his admission to a university laboratory or dental school approved by Council. He must submit, with his application, a statement from the professor under whom he intends to work, indicating willingness to undertake the required supervision and recording the approval of the head of the university department concerned. Such a supervisor will be expected to submit to the Council a confidential report on the grantee's work at the mid-year and on the conclusion of the award.

7. Successful candidates are required to devote themselves for a period of twelve consecutive months wholly to the objects of the award. During that time they are forbidden to hold any position of emolument or to engage in teaching for more than four hours a week.

8. Tenure of a Fellowship shall normally commence on July 1st but in exceptional circumstances the Council may authorize a change in this date.

9. A Fellow shall submit reports on his work as follows:—

(a) On conclusion of the tenure of the Fellowship, or not later than September 15th following this conclusion a complete and detailed report on the work carried out during the entire tenure.

(b) In a case where the Fellowship is renewed, a concise report at the end of the first year of tenure.

These reports must have the written approval of the grantee's supervisor.

10. Subject to the approval of the supervisor, Fellows are free to publish the results of work done during the tenure of a Fellowship. The Fellow shall provide the Council with five reprints of all such publications. These papers should acknowledge assistance given by the National Research Council. This may be provided for by placing an asterisk after the author's name on the title page and a related foot-note reading—*Dental Research Fellow, National Research Council, Canada.

11. Awards are payable as follows:—

(a) Awards tenable in Canada—50 per cent on notification from the supervisor that a Fellow has reported for work; 40 per cent on receipt of a report from the supervisor that satisfactory progress has been made; 10 per cent on completion of the period of tenure and the submission to the Council of a satisfactory report on the year's work.

(b) Awards tenable outside Canada—50 per cent not more than one month prior to the departure of the grantee to take up his award; 50 per cent at the mid-term following receipt of a report from the supervisor that satisfactory progress has been made.

12. Graduate Fellowships with a value of up to \$4,000 per annum will be open to graduates in dentistry with high academic standing. The value of the Fellowship will depend on the candidate's qualifications and experience.

Senior Fellowships with a value of up to \$5,000 per annum will be open to graduates in dentistry who have had experience in research work. The value of the Fellowship will depend on the candidate's training and achievement in original research.

13. Each person awarded a Dental Research Fellowship may be paid a travelling grant towards any necessary travelling in Canada and the United States, on the basis of single coach railway fare. For ocean travel the Council will pay tourist ocean fare plus rail coach fare each way. A further grant equal to two-thirds of this total amount will be paid towards the travelling expenses of a married Fellow when accompanied by his wife.

14. Application for a Dental Research Fellowship, and all required supporting documents, must be received not later than October 15th or February 1st, for awards to be made in the Fall and the Spring each year, tenable from July 1st following. Late or incomplete applications will not be considered.

Address all communications to:

The Awards Officer,
National Research Council,
Ottawa 2, Canada.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1957	Winnipeg, Manitoba	June 23rd-26th
1958	Montreal, Quebec	Oct. 5th-8th
1959	Halifax, Nova Scotia	_____
1960	Ottawa, Ontario	_____

FUTURE EVENTS

Date	Function	Location	Officer	Address
Oct. 17-18-19	Montreal Dental Club Annual Fall Clinic	Montreal, P.Q.	Dr. Bruce Ward	1414 Drummond St. Montreal, P.Q.
Nov. 23	Faculty Day Dental Alumni Alumni Assoc.	Toronto, Ont.	Dr. R. Moore	2 Grenview Blvd. Toronto, Ont.
Dec. 2, 1956	A.A.D.M. Mid Annual Meeting	New York, N.Y.	Dr. A. Reiner	114-01—201st Street, St. Albans 12, N.Y.
Dec. 3-7	Greater New York Dental Meeting	New York, N.Y.	Dr. R. E. Morse	Room 106A, Hotel Statler, New York, N.Y.
Feb. 21, 1957	Dental Workshop Conference	Royal York Hotel, Toronto, Ont.	Dr. F. H. Compton	City Hall, Toronto, Ont.
Sept. 7-14 1957	Congrès de la Fédération Dentaire Internationale	Rome, Italy	G. H. Leatherman,	Secretary, London, England

SHORT GRADUATE COURSES

November 5-9, 1956	Radiodontics	Enrolment Limit 10
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This course will be devoted to a study of Dental Radiographic Technique and Interpretation. The intraoral and extraoral techniques which are in common usage will be demonstrated and participants will engage in a "work-shop" and will make radiographs by simple techniques using patients provided for the purpose. Radiographic Interpretation will be dealt with in a comprehensive manner commencing with the basic principles, and later the normal and abnormal appearances will be considered. Where possible there will be correlation of the radiographic appearances with the underlying pathological conditions. Seminars will be conducted for the purpose of discussing some problems.

This course will be under the general direction of Dr. Maxwell N. Rockman, and the guest lecturer will be Dr. H. M. Worth, Radiologist, special lecturer in Radiodontics to the Faculty of Dentistry, University of Toronto.

Tuition Fee \$100.00

ENDODONTICS

December 3-7, 1956	Enrolment Limit 8
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The course will include diseases of the pulp, diagnosis of pulp disease, pulp protection, pulpotomy, pulpectomy, therapy as applied to the pulpless tooth, obliteration of root canals in anterior and posterior teeth, root resection, bleaching discolored teeth, and consideration of systemic diseases in relation to focal infection.

The course will be under the general direction of Dr. G. C. Hare.

Tuition Fee \$100.00

ORTHODONTICS

(For the General Practitioner)

March 11-15, 1957	Enrolment Limit 12
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This course is designed for the general practitioner. It comprises a review of anatomical structure, the development of head and jaws, normal occlusion and, in addition, the aetiology of malocclusion, tissue reaction during orthodontic therapy and modern therapeutic methods for the interception of malocclusion. Laboratory and clinical periods will be scheduled to include patient examination, appliance construction and manipulation. Sessions will be scheduled during which registrants may present practical cases for consultation and discussion.

The course will be under the general direction of Dr. D. G. Woodside.

Tuition Fee \$100.00

DENTAL ORAL SURGERY AND ANAESTHESIA

April 29-May 3, 1957	Enrolment Limit 12
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The course will consist of a brief review of the fundamentals of surgery, including anatomy, pathology, radiography, differential diagnosis, and pre-operative and post-operative considerations. The systemic factors which might limit or contraindicate the extraction of teeth will be discussed, together with the latest developments in chemotherapy. Instruction will be given in local and general anaesthesia, the pathological relationship of the teeth to the maxillary sinus, fractures of the jaws, cysts, root resections, abnormal frenula, malposed and impacted teeth, cellulitis and deep neck infections, flap operations and the removal of difficult teeth and roots. An effort will be made to deal specifically with the problems which confront the general practitioner in his office.

The course will be under the general direction of Dr. J. H. Johnson.

Tuition Fee \$100.00

Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

Etude sur le syndrome de Costen

par FRANCOIS BOILEAU, B.A., D.D.S., Longueuil

Introduction

Depuis de nombreuses années, il est un sujet qui défraie périodiquement les chroniques dentaires, je veux parler du syndrome de Costen. Etant un problème médical et dentaire, ces titres lui donnent droit à une attention particulière, du fait qu'il met bien en évidence le côté médical de notre profession.

Je crois que pour aborder toute discussion sur le sujet, il est extrêmement important d'étudier l'articulation temporo-mandibulaire au point de vue anatomique. Je m'étendrai un peu longuement sur celle-ci mais je crois que c'est avec raison. Je touche aussi la question des arthrites, car c'est un facteur étiologique particulièrement important au point de vue du syndrome.

Je n'insisterai pas sur le diagnostic et le traitement, parce que je crois qu'ils sont hors de question dans la discussion présente.

Costen a groupé différents symptômes sous un syndrome qui porte aujourd'hui

son nom. Il a tiré ses conclusions après de nombreuses et méticuleuses observations cliniques. La discussion a pris naissance, (elle continue encore aujourd'hui) à partir du moment où Costen a voulu en expliquer l'étiologie.

Recherchons donc ensemble le pour et le contre, en faisant une revue de la littérature assez volumineuse qui existe sur ce sujet.

Anatomie

Toute la discussion autour du syndrome de Costen repose sur l'anatomie de l'articulation temporo-mandibulaire et les régions avoisinantes. C'est pourquoi, à mon avis, il est convenable de s'étendre un peu longuement sur cette question.

Je ferai appel surtout à Zimmermann⁸ qui a fait une étude sérieuse de la question particulièrement en rapport au syndrome. J'insisterai plus particulièrement sur les structures environnantes plutôt que sur l'anatomie de l'articulation en elle-même.

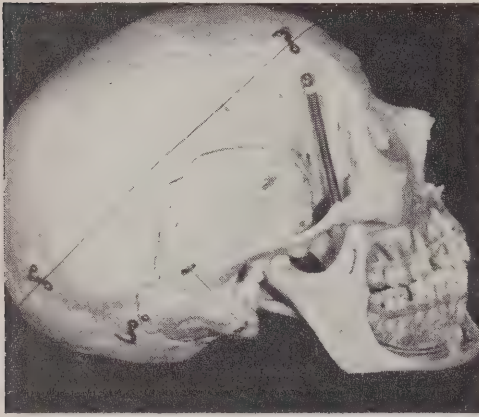


FIG. 1

Vue d'ensemble latérale de l'articulation temporo-mandibulaire.

a) Anatomie de l'articulation

L'articulation temporo-mandibulaire est un exemple de diarthrose. Les parties osseuses sont, d'une part la portion antérieure de la cavité glénoïde, et d'autre

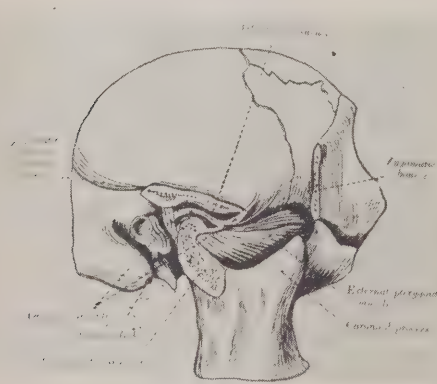


FIG. 2

Rapports du condyle avec le disque articulaire.

part le condyle du maxillaire inférieur.

L'articulation est solidement maintenue en place grâce aux ligaments, la capsule articulaire et les muscles puissants de la mastication.

Il y a trois ligaments; le ligament latéral externe, le sphéno-mandibulaire et

le stylo-mandibulaire. Le ménisque articulaire se compose de fibro-cartilage et s'adapte parfaitement aux surfaces articulaires. Il sépare deux cavités tapissées par une membrane synoviale; la cavité synoviale supérieure (la plus grande) et la cavité synoviale inférieure. Elles sont lubrifiées par le liquide synovial.

Enfin, la capsule articulaire enveloppe le tout.

J'admets qu'il s'agit ici d'un aperçu très très succinct, mais je l'ai fait volontairement, considérant l'anatomie des régions environnantes comme beaucoup plus importante et digne d'intérêt, car c'est autour d'elle qu'évolue toute la discussion.

b) Anatomie des régions environnantes

Nous étudierons les attachements de la capsule en les subdivisant en quatre parties; antérieurs, latéraux, mésiaux et postérieurs.

1° Postérieurs

Ils se situent sur la crête articulaire postérieure de l'os temporal. C'est une légère crête osseuse s'étendant du tubercule zygomatique postérieur latéralement vers l'épine du sphénoïde. Ils sont directement en avant des fissures tympano-squameuse antérieure et pétro-squameuse antérieure. La dernière existe seulement du côté latéral et se subdivise mésialement en fissure pétro-squameuse et pétro-tympanique. Cela est dû à l'interposition du prolongement inférieur du tegmen tympani (petite portion du rocher temporal) entre l'écaille et l'os du tympan ("squama and tympanic plate").

Le mur postérieur de la capsule descend sur le col du condyle. L'étroite portion entre ce dernier et l'os du tympan est parfois appelée "partie extra-capsulaire".

Lors de l'occlusion, cet espace mesure seulement cinq ou six millimètres de large et dix millimètres de haut. Lors de l'ouverture, le ptérigoidien externe se contracte et la tête du condyle s'appuie

sur l'éminence articulaire. L'espace s'élargit.

Dans la position de repos, le condyle vient se poser sur le tubercule zygomatique postérieur ("post glenoid process") et non sur l'os du tympan ("tympanic plate").

La loge parotidienne ("retro-mandibular fossa") est emplie presque uniquement par la glande parotide qui étend son prolongement ("retro-mandibular process") entre le mur postérieur de la capsule et l'os du tympan.



FIG. 3

Relations de la portion cartilagineuse de la trompe d'Eustache: à a) la fosse articulaire; b) la capsule articulaire indiquée par la ligne pointillée.

Les branches du nerf facial sont englobés dans la glande parotide et vont émerger à la partie antérieure de celle-ci.

L'auriculo-temporal passe en arrière du col du condyle bien au-dessous de l'attachement de la capsule articulaire. Il est faux d'affirmer qu'il passe entre le condyle et l'os du tympan, comme malheureusement cela a été souvent affirmé.

Il n'y a donc pas de possibilité qu'il soit coincé. Cependant, certaines branches de ce nerf atteignent la partie postérieure de la capsule. Elles constituent probablement la source première de la douleur dans la malocclusion et la fibrose de la capsule.

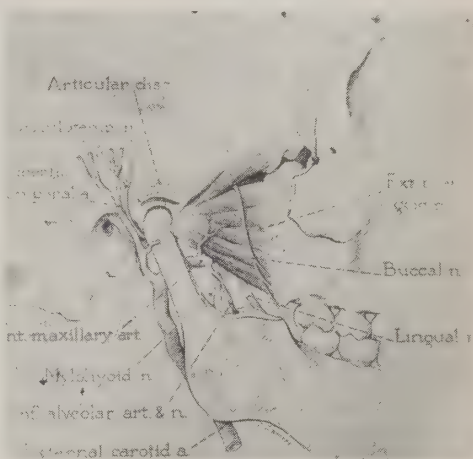


FIG. 4

Rapports du ptérégoidien externe avec le bord antérieur de la capsule articulaire, le ménisque et le col du condyle.

Ordinairement, une branche de l'auriculo-temporal se relie au facial pour donner la sensibilité à une légère portion de la peau des joues. Les autres branches innervent la paroi antérieure du conduit auditif externe, la face externe du pavillon et sa partie antérieure.

Les branches parotidiennes ne font partie intrinsèque de l'auriculo-temporal en aucune façon.

Il existe des fibres para-sympathiques émergeant dans le ganglion otique pour innervier la parotide.

2° Latéraux

La partie latérale s'attache sur le versant antérieur du tubercule zygomatique postérieur, sur l'apophyse zygomatique du temporal et sur le bord latéral de l'éminence articulaire.

Le ligament temporo-mandibulaire ren-

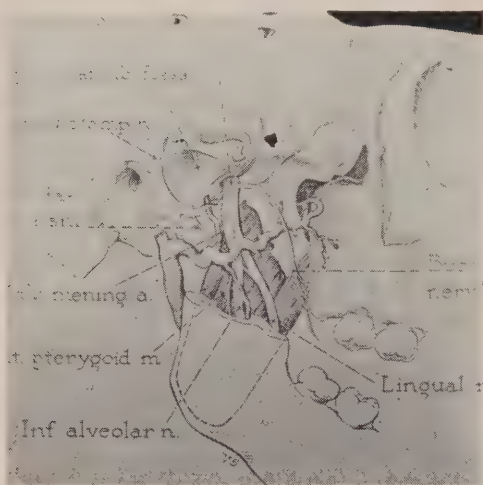


FIG. 5

Rapports généraux des structures importantes de l'articulation.

forcit et va en bas et en arrière en partant de l'apophyse zygomatique et du tubercule zygomatique postérieur pour aller s'insérer sur le col du condyle.

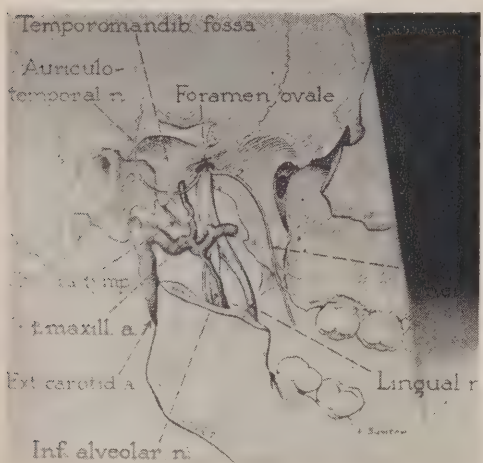


FIG. 6

Parcours de l'artère maxillaire interne, des branches de la portion mandibulaire du trijumeau et de la corde du tympan.

Puis la partie supérieure de la parotide enveloppe le tout. Nous trouvons enfin

vers l'extérieur le fascia superficialis et la peau.

3° *Mésiaux*

Elle s'attache sur le temporal, plus exactement son écaille, sur une légère crête osseuse. Elle repose près de l'épine du sphénoïde (spina angularis) (angular spine of the sphenoid bone).

En arrière, on trouve la fissure petro-tympanique qui contient une faible portion de la corde du tympan. Ce nerf passe ensuite en avant, médialement à l'épine du sphénoïde et rejoint le lingual dans la fosse temporale ("infra temporo fossa").

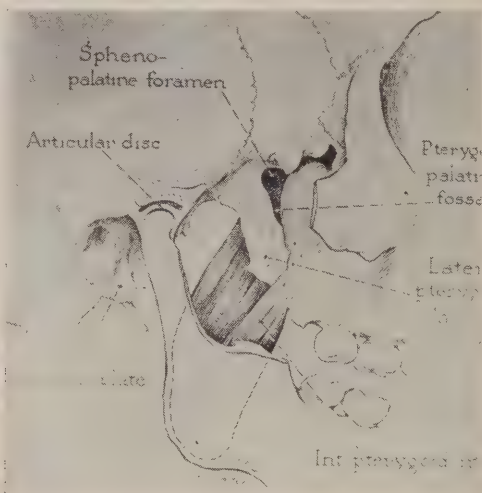


FIG. 7

Parcours et rapports du pterégoidien interne.

Si l'on dissèque l'articulation, on n'aperçoit pas la corde du tympan, car elle est cachée dans la fissure et recouverte par le périoste. La partie antérieure de la plaque du tympan rejoint l'épine du sphénoïde bien médialement à la partie même la plus interne de l'attachement de la capsule.

L'isthme étroit de la trompe d'Eustache repose directement en avant de cette jonction, médialement à l'épine du sphénoïde. Ce point se situe à huit ou neuf millimètres de la paroi mésial de l'émittance articulaire dont il est bien séparé

par l'épine du sphénoïde. A l'isthme, les portions osseuses et cartilagineuses de la trompe se rencontrent. La trompe se dirige ensuite médialement et en avant. Elle se termine dans le naso-pharynx par l'orifice tubaire ("Tubal ostium").

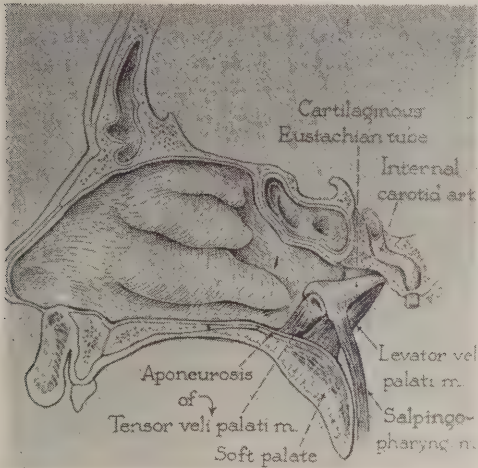


FIG. 8

Vue médiale du naso-pharynx.

Il n'existe donc pas de relation étroite avec la capsule. La paroi latérale est recouverte par le muscle péristaphylin externe (tensor veli palatini) qui fait la cloison avec les structures de la fosse temporale.

4° Antérieurs

La capsule s'attache à la crête antérieure de l'éminence articulaire. Les structures environnantes sont contenues dans la partie inférieure de la fosse temporale sous l'arc zygomatique. Les parois osseuses de la fosse sont les suivantes: latéralement, la branche montante du maxillaire inférieur; en avant, la tubérosité; médialement, l'apophyse ptérigoïde et l'épine du sphénoïde. La toiture osseuse est formée en grande partie par la grande aile du sphénoïde et un peu par l'écaille du temporal. Dans la paroi médiale, on trouve une échancrure très profonde entre l'apophyse ptérigoïde et la grande aile du sphénoïde.

De la paroi interne de la branche montante jusqu'au milieu de la trompe d'Eustache, la distance est d'environ un pouce.

On trouve des branches nerveuses du trijumeau très importantes; le long buccal, le lingual, l'alvéolaire inférieur et l'auriculo-temporal. Retenons de cela que la corde du tympan rejoint le lingual entre les deux ptérigoidiens.

Il est important de noter ici les rapports qui existent entre la portion cartilagineuse de la trompe d'Eustache et les structures de la partie inférieure de la fosse temporale.

Le tensor veli palatini part de la fosse scaphoïde à la base des apophyses ptérigoïdes et aussi de la paroi latérale de la portion cartilagineuse de la trompe d'Eustache.

Il descend verticalement entre l'apophyse ptérigoïde et le ptérigoidien interne pour aller s'insérer sur le palais mou.



FIG. 9

Vue sagittale de l'articulation.

On doit donc conclure que le tensor veli palatini ainsi que la trompe d'Eustache sont situés mésialement aux structures de la partie inférieure de la fosse temporale.

La branche maxillaire inférieure du trijumeau repose latéralement et à l'arrière de ce muscle; la portion cartilagineuse de la trompe, mésialement.

Physiologie

Antoni⁴ nous en donne un bref résumé.

Il existe trois sortes de mouvements.

—Rotation.

—Glissement.

—Torsion.

Ces mouvements sont effectués par les déplacements du maxillaire inférieur grâce aux muscles de la mastication.

Le maxillaire inférieur est:

1—Abaissé lors de l'ouverture de la bouche.

2—Élevé lors de la fermeture.

3—Déplacé vers l'avant ou l'arrière, selon qu'il y a protrusion ou rétrusion.

4—Déplacé à gauche ou à droite lors de l'excursion latérale.

1—Ouverture de la bouche

Celle-ci s'effectue grâce au concours du ptérégoidien externe et du groupe des muscles supra-hyoidiens. L'apophyse coronoïde s'avance en avant et en bas tandis que le gonion va en arrière et en bas. Il s'en suit une élongation du muscle temporal, du masseter et du ptérégoidien interne.

Le condyle et le ménisque articulaire glissent vers l'avant dans la cavité glénoïde; le condyle exerce une rotation sur la surface inférieure du ménisque.

2—Fermeture

Elle est produite par le temporal, le masseter et le ptérégoidien interne. Durant cette phase, le condyle retourne en arrière dans la cavité glénoïde. Les mouvements postérieurs anormaux sont prévenus par l'occlusion des dents.

La position de l'axe transverse autour duquel s'effectue ce mouvement d'abaissement et d'élévation est, croit-on, au niveau du foramen mandibulaire. Cet endroit constitue donc, de toute évidence,

un point où il n'existe presque pas de mouvements; c'est pourquoi, les vaisseaux et les nerfs qui entrent au niveau de l'épine de spyx ne sont pas tordus lorsque la bouche s'ouvre ou se ferme.

3—Protrusion et rétrusion

Ces mouvements sont causés par les muscles ptérégoidiens, temporal et masseter. La mandibule, lors de la protrusion, est poussée vers l'avant et subit en même temps un léger abaissement. Durant la rétrusion, ce sont les mouvements contraires.

Durant ces phases, le condyle et le ménisque glissent sur la surface articulaire temporale.

4—Excursion latérale

Celle-ci est accomplie par les muscles ptérégoidiens externes de chaque côté. Le condyle et le ménisque d'un même côté glissent en avant, mésialement et en bas pour s'arrêter enfin sur l'éminence articulaire. Pendant ce temps, de l'autre côté, le condyle et le ménisque subissent un mouvement de rotation.

Arthrites et articulation temporo-mandibulaire

Plusieurs auteurs font appel aux arthrites, seules ou associées à d'autres facteurs, pour expliquer les symptômes du syndrome.

Comme toutes les autres, l'articulation temporo-mandibulaire peut subir l'attaque de cette maladie.

Pour ces raisons, il convient de jeter un rapide coup d'oeil sur le sujet.

1°—L'arthrite traumatique

Elle est ordinairement causée par une blessure violente; mais de petits chocs répétés, dépassant les limites physiologiques, peuvent aussi la provoquer.

En effet, lorsque, pour une raison quelconque, les mouvements dépassent ces limites, les tissus mous qui relient les deux structures osseuses subissent un étirement et, parfois, un déchirement.

Elle est:

a) aiguë; quand elle résulte d'un seul choc subit.

- b) Sub-aiguë; quand elle résulte de petits chocs chroniques.

Le degré pathologique dépend du genre, de la durée et du degré de sévérité de la blessure.

Une réaction inflammatoire s'installe dans la synoviale et même une hémarthrose, surtout si la capsule articulaire est déchirée.

Signes et symptômes.

- Les symptômes aigus apparaissent subitement.
- Elle est très fréquente chez les jeunes sujets.
- Ordinairement mono-articulaire.
- Douleur localisée à la palpation et lors des mouvements, lesquels sont d'ailleurs limités.
- Enflure locale.

Au point de vue diagnostic différentiel, on peut dire que le traumatisme est spécifique dans l'histoire de cas et de plus que la lésion est mono-articulaire.

2°—*L'arthrite infectieuse*

Elle est évidemment causée par des bactéries. En général, les staphylococci sont en cause, plus rarement les pneumococci et gonococci; de même que le tréponème pâle de la syphilis ou le bacille de Koch de la tuberculose.

Examen clinique.

Présence d'une réaction inflammatoire, caractérisée par une douleur très vive, la perte des mouvements et la pyrexie.

La palpation produit aussi une douleur violente.

Dans les cas extrêmes, il y a une suppuration active qui peut causer une destruction rapide du ménisque et des surfaces articulaires. Il peut en découler une ankylose fibreuse ou osseuse. Chez l'enfant, cette ankylose peut survenir très tôt.

Signes et symptômes.

- En général, cette arthrite apparaît subitement; mais elle s'étend parfois sur une période très longue.
- Elle est d'abord poly-articulaire pour devenir ensuite mono-articulaire.
- Les symptômes infectieux sont présents; i.e. élévation de la température, frissons, . . . etc.

—Douleur violente lors des mouvements.

—Elle apparaît ordinairement entre vingt et quarante ans.

Diagnostic différentiel.

Il s'agit d'une infection spécifique. Dès lors, il faut prendre une culture, ceci en aspirant un peu de liquide articulaire.

3°—*L'arthrite rhumatismale*

Son étiologie est inconnue; pour les uns, il s'agit d'une infection locale chronique: pour d'autres, c'est une condition allergique.

Récemment, la possibilité d'une mal-fonction adrénocorticale a été émise.

Règle générale, elle s'attaque à toutes les articulations, quoiqu'elle puisse être mono-articulaire.

Signes et symptômes.

- Les articulations sont douloureuses aux mouvements, spécialement le matin.
- Il se produit une enflure au niveau des articulations qui sont atteintes.
- Elle suit un cycle intermittent.
- Il se produit une amélioration au cours de la journée.

Pathologie.

Les dommages s'étendent à deux niveaux; intra et extra-capsulaire. Le liquide synovial apparaît alors brumeux avec leucocytose, particulièrement des neutrophiles. La synoviale sécrète un exsudat séreux qui progresse lentement pour atteindre les cartilages. Il en résulte une destruction des surfaces articulaires, ce qui amène une diminution de l'espace inter-articulaire.

4°—*Dégénérescence*

Il semble que, pour ce qui est de l'articulation temporo-mandibulaire, elle puisse résulter du bruxisme et des malocclusions inhérentes ou acquises.

Cette dégénérescence amène une résorption du cartilage articulaire avec exposition subséquente de l'os sous-jacent.

Les tissus adjacents, conjonctif et osseux, prolifèrent, amenant une hypertrophie marginale.

Cet état de choses survient, dans la grande majorité des cas, à la tête du

condyle; cependant, il peut se retrouver sur la surface articulaire de la cavité glénoïde. Le ménisque présente une dégénérescence similaire; il se produit même parfois une perforation.

Signes et symptômes.

- Fait une apparition progressive.
- Surtout chez les personnes âgées de plus de quarante ans.
- La douleur en constitue de symptôme principal.
- Elle apparaît au travail, mais disparaît au repos.

Diagnostic du syndrome de Costen

1—Histoire de cas

Elle devra comporter une description de la nature, de l'apparition et de la durée des symptômes; ainsi que la zone de distribution de la douleur.

2—Examen clinique

F. W. Craddock⁸ nous en donne une description très minutieuse.

- Palpation de l'articulation temporo-mandibulaire en vue de découvrir la douleur.
- Palpation bilatérale du conduit auditif externe pour déceler l'assymétrie de position ainsi que les mouvements anormaux. Elle nous permettra aussi, de trouver les craquements anormaux, s'il y a lieu.
- Examen de l'occlusion et recherche de la fermeture excessive.
- Examen lors de la fermeture, en vue de détecter les déplacements possibles.
- Examen des dents pour voir des facettes usées.
- Recherche de l'occlusion faciale assymétrique.
- Examen à l'ouverture et à la fermeture pour déceler les chocs et la trajectoire assymétrique possible des condyles.
- Palpation des muscles, temporal et masseter, en occlusion centrique et excentrique.
- Reproduire l'appareil masticateur sur l'articulateur en vue d'une étude plus approfondie.

3—Le syndrome

a) L'oreille.

- Sensation de tintement.
- Sensation d'obstruction.
- Vertige.
- Légère surdité catarrhale.
- Douleur à l'intérieur ou autour de l'oreille.

b) Articulation temporo-mandibulaire.

- Douleur à la palpation.
- Bruits au cours des mouvements.
- Douleur aussi au cours des mouvements.
- Mouvements excessifs.
- Mouvements limités.

c) La tête.

- Mal de tête typique de celui qui survient lors d'un sinusite.
- Douleur dans la région du vertex, de l'occiput ou post-auriculaire.
- Néuralgie en différents endroits; c'est-à-dire sur le maxillaire supérieur, au niveau de la branche montante du maxillaire inférieur et au niveau du cou.

d) Nasopharynx.

- Sensation de brûlure, de douleur ou de picotement sur la langue.
- Les mêmes sensations dans la gorge.
- Les mêmes sensations sur le côté du nez.

4—Examen radiologique

Il faut rechercher l'évidence bien précise d'une rétro-position condylienne. Cependant, en pratique, nous l'obtenons rarement sur la pellicule radiographique. Elle n'est pas nécessaire du fait qu'une simple fermeture excessive, sans rétro-position, peut amener les symptômes.

Discussion

En vue de faciliter la discussion, il convient de réunir tous les symptômes en deux thèmes principaux, qui les englobent d'ailleurs admirablement. Je les divise donc en symptômes neurologiques et otologiques.

Les premiers comprennent le domaine de la douleur, la sensation de brûlure à la langue, . . . etc.

Les seconds comprennent la surdité, le vertige, . . . etc.

a) *Les symptômes neurologiques*

Allons tout d'abord directement à la source de la discussion, c'est-à-dire Costen lui-même. La cause du syndrome serait une irritation directe des structures anatomiques de l'articulation temporo-mandibulaire et de la région.

Ainsi, selon Costen^{1,2,5} . . .

—Le condyle, dans sa trajectoire pathologique due à une fermeture excessive cause une irritation directe du nerf auriculo-temporal au moment où celui-ci passe sur le côté mésial de la capsule articulaire entre le condyle et la plaque tympanique.

—Il se produit un réflexe de douleur ainsi que des désordres sensitifs dans les différentes branches de la corde du tympan. Il s'agirait encore ici d'une irritation directe par le condyle sur la corde du tympan au moment où il sort par la fissure de Glasser.

—Il y aurait aussi une perforation du ménisque articulaire amenant une usure de la mince lamelle osseuse qui constitue le toit de la cavité glénoïde. Il s'en suit une irritation de la dure-mère. C'est un fait supposément prouvé par les spécimens anatomiques de la collection de Prentiss et par les siens propres.

L'étiologie de tous ces troubles est la malocclusion. Ainsi, dans un article qu'il écrit avec Ernest, il affirme que, la position la plus reculée du condyle étant déterminée par l'occlusion, la malocclusion amène des désordres dans l'articulation. Longtemps avant l'apparition de la douleur, l'irritation des nerfs sensitifs de la capsule amène un trismus. Une pression irrégulière s'exerce alors sur le ménisque et les autres structures environnantes comme le nerf auriculo-temporal. Ensuite, la névralgie fait son apparition dans les autres branches du trijumeau: douleur occipitale, brûlure de la langue, . . . etc.

Dans plusieurs cas de sensation de brûlure de la langue, il se produit souvent en même temps une inhibition salivaire simultanée due à l'irritation de la corde du tympan et du nerf auriculo-temporal.

Telle est en résumé, la position de

Costen en ce qui concerne les symptômes neurologiques. Plusieurs auteurs se sont rangés de son avis; les uns, sans étude sérieuse, les autres, en y apportant leur point de vue particulier.

Je tiens ici à bien spécifier un fait important. De toutes les discussions autour de Costen, il n'y en a que très peu à retenir; car beaucoup d'auteurs se sont bornés à approuver ou désapprouver sans se donner la peine d'étudier à fond le problème.

C'est le cas de Frey⁴. Il croit que l'irritation directe de l'auriculo-temporal est la cause de la douleur dans la région temporale. Quant à Pringle⁶, il fournit l'explication suivante aux maux de tête: la dure-mère subit une irritation par le condyle à travers la mince paroi osseuse de la cavité glénoïde. Il se range de l'avis de Costen sur la question de la corde du tympan.

Steinmann⁵ admet que le nerf auriculo-temporal ainsi que la corde du tympan soient traumatisés par le condyle; il concède cependant qu'il n'existe aucune preuve à cet effet.

Dechaume, Paggioli et Rouot⁴ appuient Costen, mais avec une exagération qui nous oblige à les omettre.

Comme bien l'on pense, cette opinion a suscité de nombreuses critiques. Examinons un peu l'opinion d'auteurs sérieux comme Zimmermann et Sicher^{15,6,8}. Nous voici en présence d'une recherche sérieuse que l'on peut qualifier d'impartiale.

Selon Zimmermann, toute la discussion repose sur des concepts anatomiques faux; et en cela, il semble que l'on doive l'approuver. Il est bon de référer ici à la description anatomique que j'ai donnée précédemment. Rappelons ici que la corde du tympan, très mince filet nerveux, sort de la base du crâne par la fissure pétrotympanique. Elle passe derrière l'attachement de la capsule articulaire dans cette région. Il est donc faux d'affirmer que la corde du tympan fasse partie de la portion extra-capsulaire de la cavité articulaire. De plus, elle est recouverte par le périoste. Il n'y a que quelques millimètres qui sont visibles dans la fissure

péto-tympanique. Le nerf passe ensuite en avant, mésialement à l'épine du sphénoïde, et va rejoindre le nerf lingual.

On doit donc conclure qu'il est peu probable que la corde du tympan subisse une compression par la portion interne de la tête du condyle. Ce ne serait possible que par une fibrose très considérable de la partie postéro-mésiale de la capsule articulaire; ce qui est plus que douteux.

La douleur venant de la dure-mère par irritation doit être rejetée pour la raison suivante. En supposant que la portion extra-crânienne de la cavité glénoïde s'érode, on doit s'attendre normalement à ce que la portion intra-crânienne prolifère; c'est une réaction physiologique normale dans le corps humain. Je ne vois pas pourquoi cette région ferait exception à la règle générale.

Quant à l'auriculo-temporal, on doit mettre de côté l'idée d'une irritation ou d'une compression quelconque lors de son passage dans la loge parotidienne ("Retro-mandibular space").

En effet, sa trajectoire se situe sur le côté mésial du col du condyle, bien au-dessous de la capsule articulaire. Le nerf auriculo-temporal ne se trouve jamais dans une position vulnérable, même lors d'une rétroposition condylienne très prononcée.

Il possède cependant des branches nerveuses qui donnent la sensibilité à la capsule. Ces dernières peuvent subir l'irritation précitée. C'est, selon Zimmermann, la seule partie de l'explication de Costen qui semble acceptable.

Les névralgies faciales, temporales, linguales, vertébrales et occipitales, sont possibles en temps que douleur réfléchie.

Sicher^{15,6,3} se range de l'avis de Zimmermann⁵. Il affirme que l'auriculo-temporal passe inférieurement au col du condyle et que la corde du tympan est bien protégée dans la fissure péto-tympanique. Ces deux structures sont donc anatomiquement incompressibles. En plus, il nous fait remarquer que la corde du tympan amène des influx gustatifs et non pas sensitifs.

Il est probable et même certain qu'il y aura prolifération de la portion osseuse

intra-crânienne, si la dure-mère vient à subir une irritation.

On constate facilement que Sicher suit à peu près la même ligne de pensée que Zimmermann.

L'étiologie de la douleur à l'articulation serait l'arthrite traumatique. Quant à celle que l'on rencontre hors de l'articulation, elle serait réfléchie.

Plusieurs auteurs comme Craddock, Adler et Carlson^{6,3,18} appuient cette version.

Brussel⁵ attribue au psychisme la sensation de brûlure à la langue et la parésie que l'on trouve parfois.

Pelletier¹⁷ signale la possibilité d'une arthrite rhumatoïde. Une pulpite ou une périécementite sur une molaire peuvent occasionner une douleur irradiant vers l'articulation; particulièrement avec la dent de sagesse, selon Thielman et Wang-Norderud¹⁴.

On voit donc que Pelletier insiste beaucoup sur le rôle de l'inflammation; nous y reviendrons plus particulièrement lors de la discussion des symptômes otologiques.

On ne peut accepter pleinement les explications de Costen, car ce dernier parle surtout comme un clinicien. Il est hors de tout doute que le syndrome existe cliniquement, mais il a eu grand tort de se couper littéralement les cheveux en quatre pour trouver coûte que coûte une explication. S'il pêche par excès clinique, ses adversaires eux aussi, font des excès, mais ceux-là d'ordre anatomique.

Zimmermann reproche à Costen de se baser sur des concepts anatomiques faux, pris sur le non-vivant. Mais, je ne crois pas que lui-même se soit adonné à la vivisection! Que Costen ait fait erreur anatomiquement parlant, mais il reste que le point de vue clinique demeure et a son importance.

Zimmermann admet d'ailleurs la possibilité d'une irritation des terminaisons nerveuses de l'auriculo-temporal; il ne le désapprouve pas complètement. D'un autre côté, on doit rejeter l'hypothèse d'une irritation directe du nerf auriculo-temporal et de la corde du tympan. La douleur rapportée a aussi son rôle à jouer; mais n'oublions pas que l'inflam-

mation peut avoir ici un rôle très important. Elle pourrait, grâce à l'œdème qui l'accompagne, exercer la compression des structures anatomiques qui, et c'est là le sujet de la controverse, ne peuvent être comprimées directement. Il me semble que cette position rallie un peu les camps opposés.

Voici en résumé l'étiologie de la partie neurologique du syndrome, cela, telle que je la conçois. Elle est:

- Partiellement irritative (irritation anatomique directe sur les terminaisons nerveuses capsulaires de l'auriculo-temporal).
- En grande partie inflammatoire (arthrite).
- La douleur réfléchie a aussi son rôle à jouer.

b) *Les symptômes otologiques*

Nous emploierons ici le même procédé que pour la discussion précédente.

Selon Costen^{1,2,5}, les symptômes de surdité catarrhale apparaissent à cause de la compression des tissus mous entourant la trompe d'Eustache. Le ménisque articulaire s'amincit et sa partie la plus mince, vis-à-vis du tubercule, là où le trismus est le plus grand, se perce. Les deux surfaces osseuses en contact s'érodent, ce qui amène une réaction inflammatoire. La capsule articulaire se densifie et le condyle occupe alors une position anormale dans la cavité glénoïde.

La portion supérieure du ptérégoidien externe est flasque et la masse de tissus mous comprime la trompe d'Eustache.

Shapiro et Truex¹⁵ doutent que le condyle puisse faire pression sur le conduit auditif externe. Ils admettent cependant la possibilité d'une action des tissus mous sur la trompe d'Eustache.

Cette partie du syndrome est celle qui est la plus discutée et probablement aussi la plus discutable.

Sicher^{15,9,3}, nous fait remarquer que le ptérégoidien est tendineux dans la région où il peut avoir une influence quelconque sur la trompe d'Eustache. Ceci signifie que même, lors de la fermeture excessive, il n'y aura aucun changement dans le diamètre du muscle dans sa portion qui est en rapport avec le tensor veli palatini. De plus, ce dernier a tendance à se

contracter en même temps pour élever le palais mou.

Or, la ventilation de la trompe d'Eustache est automatique avec la contraction de ce muscle. Donc, au lieu d'effectuer le blocage de la trompe, la fermeture excessive semble plutôt l'ouvrir.

Adler³ note aussi que la trompe d'Eustache s'ouvre selon un angle oblique, ce qui lui donne une plus grande largeur d'orifice. De plus, son élévation postérieure, qui, plus bas, commence le pli salpingo-pharyngien, est spécialement propre à maintenir l'efficacité de la trompe. Il est donc passablement difficile pour le palais mou de se placer dans une position où il pourrait fermer la trompe d'Eustache.

Conner⁸ affirme que la sensation de blocage du conduit auditif externe est un symptôme très commun que l'on retrouve dans de nombreuses conditions pathologiques.

Zimmerman⁹ n'accepte en aucune façon l'opinion de Costen. Lors de la rétroposition du condyle, le ptérégoidien externe subit un étirement, mais avec une perte correspondante de tonus musculaire. Il est donc faux de supposer qu'il puisse faire pression sur la portion cartilagineuse de la trompe d'Eustache. D'ailleurs, la région latérale de cette portion n'est pas accessible à l'observation directe chez le vivant.

Costen a noté la présence de tissu adipeux, mais il a omis de lui attribuer un rôle de coussinet.

De la même façon, le relâchement de la capsule articulaire et du ligament sphéno-mandibulaire ne peut être mis en cause.

Pour ces multiples raisons, on doit rejeter l'hypothèse d'une compression de la trompe d'Eustache. La surdité semble être causée par une condition catarrhale co-existante.

Il est intéressant de noter ici les observations de Batson's sur le patient vivant sans paroi nasale externe. Lors de la déglutition la bouche étant fermée, il se produit une élévation du palais mou et aucune compression de la trompe d'Eus-

tache. Lors de la déglutition la bouche étant ouverte, on observe beaucoup de tension sur le palais mou, la trompe d'Eustache et les piliers du pharynx.

Markowitz et Gerry⁶ affirment que les changements dans la position du condyle ne peuvent en aucune façon avoir une influence quelconque sur les fonctions auditives.

Un autre auteur, Pelletier¹⁷ expose ici la question de l'inflammation. Les fluides inflammatoires peuvent, par voie lymphatique, filtrer de l'articulation temporo-mandibulaire jusque dans l'oreille moyenne; d'ailleurs, les voies de drainages lymphatiques sont les mêmes pour les deux.

Ceci amène une autre manière de comprendre les influences que peuvent avoir les désordres de l'articulation sur les fonctions auditives.

Best and Taylor²³ signalent que le vertige est toujours causé par l'excitation des canaux semi-circulaires. Si les désordres de l'articulation sont accompagnés de vertiges, on doit donc conclure à l'existence d'une relation entre les deux.

Seaver¹⁸ traite longuement du point de vue nerveux. La malocclusion amène des stimuli nerveux proprioceptifs anormaux et, par reflexe, une augmentation du tonus musculaire aboutissant à une pression anormale, surtout sur les incisives. Il s'en suit une augmentation des stimuli extéro-ceptifs dans la distribution du trijumeau. "Le tensor tympani" a les mêmes chances que les autres de voir son tonus augmenter. Enfin, la pression intralabyrinthique s'élève et est transmise par les osselets. Les changements dans la pression intralabyrinthique peuvent exciter l'extrémité du nerf vestibulaire.

Il tente de plus de donner une explication sur le peu de fréquence du syndrome de Costen par rapport à la quantité considérable de gens qui devraient selon toute évidence clinique en souffrir. Les influx anormaux seraient absorbés par le thalamus, lequel se chargerait de les associer à des influx normaux avant d'atteindre le cortex cérébral. De plus, le thalamus peut être considéré comme

un centre inhibiteur, empêchant les influx excessifs d'atteindre le cortex cérébral; mais, dans certaines conditions, il peut perdre ce pouvoir inhibiteur. Ainsi, s'il fonctionne normalement (le thalamus), le cortex n'est pas bombardé d'influx excessifs d'origine vestibulaire ou autres, même si le patient est en malocclusion. Dans le cas contraire, la correction ou l'ouverture de l'occlusion selon le cas, verra diminuer le nombre d'influx nerveux et le vertige disparaîtra.

Cette opinion, toute intéressante qu'elle puisse être, manque de solidité du fait que c'est un domaine qui ne se prête pratiquement pas à la recherche.

Harvey²⁰, après avoir fait une expérience avec des cadets de l'air, en est venu à la conclusion que la fermeture excessive n'a aucune influence sur la trompe d'Eustache.

Stanley D. Carlson¹⁸ se range de l'avis de Seaver sur la question du thalamus.

James C. R. Bell²² croit que la malposition de la mandibule explique la sténose de la trompe d'Eustache.

Comme on peut le voir, cette partie du syndrome de Costen est encore plus discutée que la précédente. De tout ce qui a été dit à ce sujet, je crois que nous devons retenir l'inflammation comme étant la principale cause, sinon l'unique, de tous les troubles dans le domaine otologique. Remarquons d'ailleurs, que plusieurs auteurs se sont attachés à cette explication. Celle-ci a de plus l'avantage d'expliquer en grande partie aussi les symptômes neurologiques. Loin de moi, l'idée de m'attacher à ce seul facteur; mais si l'on regarde l'ensemble de la discussion, nous constatons qu'il s'affirme de plus en plus.

L'inflammation, avec l'œdème qui l'accompagne, peut causer une compression sur les tissus avoisinants. Elle peut donc atteindre la corde du tympan et l'auriculo-temporal pour donner les troubles que l'on sait. Les terminaisons nerveuses de l'auriculo-temporal sont les seules qui peuvent subir un traumatisme direct.

Cette même inflammation, par ses fluides qui sont drainés dans l'oreille

moyenne, va occasionner les troubles otologiques que l'on sait.

J'avoue donc, humblement, que c'est le facteur étiologique qui répond le plus complètement à la discussion autour du syndrome de Costen. La douleur réfléchie rapportée ainsi que les états psychiques anormaux ont peut-être un rôle à jouer, mais il est secondaire.

A la lumière d'auteurs reconnus, j'abandonne toute idée de compression de la trompe d'Eustache.

Je ne veux en aucune façon déprécier l'oeuvre de Costen. Il serait malhonnête de lui enlever son mérite, car il est très grand. Nous pouvons discuter longuement sur l'étiologie du syndrome, mais il n'en reste pas moins un fait clinique sûr et certain.

Traitement

Il y a quatre sortes de traitements.

1—L'occlusion

Il consiste à corriger l'occlusion, qu'il y ait des dents ou non, avec tous les moyens actuellement à notre disposition: pièces de prothèse, couronnes, rétablissement du plan occlusal, . . . etc.

Costen prône l'ouverture de l'occlusion, ainsi que beaucoup d'autres auteurs, tels que H. Sohet⁶, L. G. Parry³¹, Ferdinand G. Neurohr⁷, qui nous décrivent quelques cas où cela fut pratiqué avec succès.

2.—Chirurgie

Plusieurs ont recours à la chirurgie pour rétablir une fonction temporo-mandibulaire normale. Il est évident qu'il s'agit là d'un moyen extrême. Plusieurs auteurs emploient cette méthode, et pour n'en citer que quelques uns: G. B. Brown et L. W. Peterson¹², Kurt H. Thoma³⁰ et Reed O. Dingman¹¹.

3—Injections

Elle consiste à injecter différentes substances dans l'articulation temporo-mandibulaire.

—Injection d'une substance sclérosante qui a pour effet de limiter les mouvements (Schultz et Shriner¹⁵). C'est une méthode couramment employée de nos jours.

—Injection d'hydrocortisone¹⁹ qui a pour effet de diminuer l'inflammation particulièrement dans l'arthrite rhumatoïde.

—A. S. Nathan²⁰ emploie l'hyaluronidase qui joue un rôle d'enzyme. Elle hydrolyse l'acide hyaluronique et brise l'inflammation.

—L. L. Schwartz²⁸ emploie le chlorure d'éthyle en jet suscutané. Il diminue le tonus musculaire et soulage la douleur.

4—Traitement psychologique, s'il y a lieu.

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Peroxyde de Na en dentisterie

D'une revue très complète sur les indications du peroxyde de Na en dentisterie thérapeutique que viennent de publier SENTENAC et RHODES (*Information dent.*, 28 oct. 1954), nous extrayons les indications suivantes:

—*Suites opératoires douloureuses des pulpectomies*: l'application de peroxyde peut être faite dès l'obtention de l'accès pulpo-canaliculaire. Si cette dernière est difficile, on ne pratiquera l'application de peroxyde qu'à la seconde séance, la première étant consacrée à un écouvillonnage soigneux de la chambre et des canaux à l'acide trichloracétique, à un séchage à l'alcool et à l'air chaud et à un pansement à l'eugénol ou à l'eugénol-merfène.

—*Mortifications pulpaire*s: le peroxyde de Na peut être appliqué d'emblée.

—*Syndromes ligamentaires*.

—*Cellulites périmaxillaires*. Dans ces cas, il est bien évident que l'on attendra le complet refroidissement de la poussée inflammatoire, la dent étant maintenue ouverte, avant d'utiliser le peroxyde de Na.

—*Formes chroniques et dissimulées de septicité dentaire*.

Traitement conservateur des arthropathies temporo-maxillaires

Les traitements habituels non sanglants de ces affections, qu'il s'agisse de réchauffement local, d'ondes courtes ou d'ultra-sons, n'ont pratiquement donné que des résultats inconstants. C'est pourquoi on s'est adressé ces derniers mois à d'autres produits.

Hyaluronidase. Extrait de gui.—HOFFMANN-AXTHELM et ZELLNER (*Deutsche zahn. Zschr.*, 15 sept. 1954) ont utilisé le premier de l'hyaluronidase et le second un extrait de gui. Les injections d'extraits de gui sont douloureuses mais ont l'avantage de faire très rapidement disparaître les phénomènes douloureux de l'arthrose en laissant cependant persister le craquement articulaire. Celui-ci, par contre, cède souvent à l'injection d'hyaluronidase. En tout cas, les deux thérapeutiques peuvent se compléter très souvent de façon heureuse et toutes les deux entraînent une amélioration fonctionnelle nette qu'il est encore impossible d'expliquer, tout au moins par l'examen radiologique. Il ne semble pas, en effet, qu'il y ait des modifications des clichés avant et après le traitement.

Hydrocortisone.—F. A. HENNY a utilisé ce traitement chez 57 malades. 56 de ces malades étaient porteurs d'une arthropathie dégénérative et le dernier présentait une poussée rhumatismale aiguë. L'injection d'hydrocortisone entraîne rapidement une sédation des phénomènes inflammatoires et douloureux et du trismus. Il est certain que s'il existe des phénomènes érosifs de la tête du condyle ou des processus prolifératifs de l'articulation, ces injections ne sont pas indiquées car elles n'auront qu'une action réduite. Néanmoins, ce traitement a toute sa valeur non pas comme traitement curatif et définitif mais comme thérapeutique d'attente (*J. Oral Surg.*, oct. 1954).

Ostéomyélite du maxillaire et streptokinase

Dans un cas d'ostéomyélite chronique résistant à tous les traitements y compris les antibiotiques, la chaleur, les irrigations et le débridement chirurgical, F. C. NICHOLS a obtenu la guérison rapide de sa malade par l'emploi de streptokinase-streptodornase. Il a injecté par la fistule qui existait sur la muqueuse alvéolaire, 1 cm³ d'une solution contenant 5,000 unités de streptokinase et 1,250 unités de streptodornase. En quelques secondes, on assiste à une liquéfaction des matériaux purulents qu'il est facile par pression de faire évacuer. Des irrigations régulièrement pratiquées les 24 heures suivantes, permirent une évacuation à peu près complète (*J. Oral Surg.*, oct. 1954).

Radiographie du maxillaire inférieur

Etude du menton et de la branche horizontale.—F. CHARIOTTI (*J. Radiol. Electrol.*, 1954, n° 7-8) propose une nouvelle technique:

—Malade, couché sur le dos ou assis, le malade doit relâcher les muscles du plancher buccal. On place un film de type endoral, maintenu par un doigt dans la concavité postérieure du menton. Le tube est déplacé vers le haut et orienté obliquement dans le sens cranio-caudal, le rayon central étant dirigé avec l'inclinaison nécessaire vers l'extrémité supérieure de la symphyse mentonnière.

Pour la branche horizontale, la technique est la même, l'hémimâchoire à radiographier étant tournée vers le tube. On place le film endoral. Le rayon central doit tomber sur le bord alvéolaire de la mâchoire.

Solution de crise

Dans la livraison d'août du Journal, on parlait des difficultés faites aux dentistes qui font partie du personnel des hôpitaux canadiens. Pour résumer la question, disons qu'on refuse au dentiste le droit de faire admettre ses patients, de leur prodiguer ses soins et de les congédier, sans l'autorisation d'un médecin. Cette nouvelle politique des hôpitaux vient en conflit avec la loi dentaire des provinces et fait fi d'une tradition établie depuis longtemps. La profession dentaire, par la voix de ses organismes directeurs, entreprend une campagne auprès des gouvernements provinciaux, pour qu'ils légifèrent favorablement en faveur des dentistes, des hôpitaux et du public en général.

Notre groupement professionnel veut faire reconnaître ses droits. C'est très bien. Mais le terme "droit" implique nécessairement "obligation". Si les dentistes veulent avoir droit de cité dans les hôpitaux, ils devront aussi vouloir être prêts à remplir certaines conditions. On ne reçoit pas sans donner. Que doivent donner les dentistes pour recevoir les privilèges qu'ils demandent dans les hôpitaux? Plusieurs choses. Si nombreuses qu'on ne peut, dans le cadre d'un article du genre, les énumérer toutes en donnant des détails. Contentons-nous de mentionner deux catégories d'obligations des dentistes envers les hôpitaux. D'abord, une obligation de base. Le dentiste doit avoir reçu une formation scientifique qui le qualifie pour son travail hospitalier. La besogne exécutée par le dentiste dans son cabinet particulier n'a pas la répercussion de la même besogne exécutée dans une institution. A son bureau, le dentiste ne fait pas partie d'une équipe; ses actes ne regardent que lui seul; il porte la responsabilité de ses faits et gestes. A l'hôpital, le dentiste engage la responsabilité de l'institution. Il ne travaille plus en vase clos; il est en relation constante avec d'autres services; il compromet la réputation de ses confrères médicaux, celle du personnel auxiliaire, celle de l'hôpital. Et on sait avec quelle précaution les hôpitaux choisissent, de nos jours, leur personnel médical; les assistants aux divers services doivent être "fellow" de ceci, "fellow" de cela. Toute cette sélection se fait dans l'intérêt du public malade et dans celui de l'hôpital.

Le dentiste donc doit être qualifié pour faire partie du personnel hospitalier au même titre que son confrère de médecine, en tenant compte des facteurs propres à chacune des professions.

Dans son cours d'études, le dentiste reçoit tout l'enseignement de base médicale nécessaire à l'exercice de sa profession dans un hôpital et la formation clinique à laquelle il a été initié durant son stage universitaire lui confère des titres de compétence dans une institution.

Cependant, malgré cette préparation, malgré des cliniques qui leur sont données dans des hôpitaux, malgré des stages post-universitaires accomplis par certains d'entre eux à l'étranger, *certain*s dentistes, pourraient avoir reçu davantage dans le domaine des fonctions hospitalières. C'est d'ailleurs ce qu'a constaté la Commission d'Enquête du Conseil d'Enseignement dentaire de l'Association dentaire canadienne à la fin de ses tournées dans toutes les facultés dentaires du pays. Elle recommande aux dirigeants des cinq écoles dentaires d'inclure dans le curriculum universitaire des stages plus prolongés dans les hôpitaux et même un internat dentaire de quelque durée avant l'octroi des par-

chemins. La faculté dentaire de notre université se rend pleinement compte du problème et elle a déjà élaboré des projets dans ce sens dans le futur hôpital universitaire.

Un autre devoir qui incombe au dentiste dans un hôpital l'oblige à donner gratuitement de son temps pour les patients de dispensaires. Nombreux sont les dentistes qui seraient prêts à accepter du travail dans un hôpital à condition d'être rémunérés. D'autres se rendront volontiers à l'hôpital pour un cas privé, mais ne se soucieront pas de travailler au dispensaire. Les médecins ont peut-être l'esprit plus éveillé à leurs responsabilités sociales parce que leur internat et leurs stages hospitaliers les y ont habitués. La proportion du nombre de dentistes qui donnent du temps aux hôpitaux en regard de leur nombre total est certainement plus faible que celle du nombre des médecins. On peut expliquer cette différence par plusieurs facteurs (dont un est le peu d'importance accordée au service dentaire dans plusieurs hôpitaux), mais l'un d'eux est certainement le faible désir des dentistes de soigner les indigents dans les hôpitaux. Et pourtant, ces traitements dentaires donnés aux indigents dans les hôpitaux entrent dans un grand programme préventif d'hygiène dentaire et offrent une solution partiel au problème d'exercice illégal.

Donc, il y a deux conditions—au moins—pour que le dentiste se sente chez lui dans un hôpital. Il faut qu'il ait la plus grande compétence possible et qu'il y arrive disposé à donner plus qu'à recevoir. A ces prix, il possédera des droits.

GERARD DE MONTIGNY

Sa pomme . . .

Lors d'une enquête à propos d'un cambriolage en Angleterre, on trouve un tragnon de pomme que le coupable avait oubliée avant de disparaître; on y lit très nettement la trace de ses dents, et un inspecteur avisé—on ne peut faire moins au pays de Sherlock Holmes et d'Agatha Christie—prend un moulage en plâtre de la pièce à conviction.

On y voit très bien les particularités de la dentition du mordeur, et notamment un diastème, c'est-à-dire un intervalle anormal entre deux dents de la mâchoire supérieure.

Ce détail permet d'innocenter, dans les jours qui suivent, un jeune garçon qu'on avait soupçonné à tort. Puis, à quelque temps de là, on arrête pour un autre cambriolage un individu, et malgré ses affirmations qu'il s'agit d'un premier délit, on se demande s'il n'est pas l'auteur aussi du premier vol. On examine ses dents: elles correspondent exactement au moulage relevé sur la pomme.

Confondu, le coupable avoue et l'histoire se termine là. Mais J. O. Coxley, qui la rapporte dans une revue de dentisterie, s'est demandé si, à mesure que la pomme se dessèche, les empreintes qu'elle peut porter ne doivent pas se déformer et devenir inutilisables. Mais il a constaté que si, dans certaines conditions, la pomme se décolore, elle conserve des empreintes parfaitement utilisables pendant plus de deux mois.

Rien n'empêche donc d'aller placer le moulage en question dans un musée criminologique, à côté, tout naturellement, de la pomme dans laquelle Adam avait autrefois mordu si inconsidérément, ce qui devait lui attirer, comme chacun sait, des ennuis considérables.

L'information médicale et paramédicale,
le 21 août 1956

Vient de paraître

"La méthode de J. E. Johnson. Twin Wire Arch." — Paul Geoffrion — Son application aux anomalies facio-maxillo-dentaires selon la classification d'Edward H. Angle. Préface de A. Beauregardt, professeur d'orthopédie dento-faciale à l'Ecole dentaire de Paris. Julien Prelat, éditeur, 6 rue de la Bucherie, Paris, France. \$10.00

Journal

OF THE CANADIAN DENTAL ASSOCIATION

Radiation hazards in dentistry*

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With probably one or two exceptions, every practising dentist in this audience, or in any group attending a refresher course in dentistry, operates an X-ray apparatus, or has in his employ an assistant who performs the task of exposing the film. The prosthodontist uses the procedure for examination chiefly of adults, but may need the diagnostic information in a cleft palate case or a partially edentulous child or youth. The oral surgeon, orthodontist, paedodontist, endodontist and periodontist, as well as the general practitioner all require the use of this apparatus during the course of rendering service to patients of all ages. In practically every instance these men have roentgen ray apparatus in their own offices in preference to referring patients to a technical laboratory or a specialist in roentgenology. In the national survey conducted by the Canadian Dental Asso-

ciation published in 1954, x-ray apparatus was used in more than 90 per cent of the offices.¹ On this continent an estimated 126,000 units are in use: 50,000 by physicians and hospitals; 65,000 by dentists. Industry uses over 2,000 units and some 30,000 sales people use fluoroscopic apparatus in the fitting of shoes, chiefly for children.²

X-ray company service men are frequently astounded at the lack of knowledge or concern exhibited by the dentist during the procedure of installing a new unit. Although it has been common knowledge that radiation, in large dosage, will affect body tissue, specific information has only recently appeared in the literature. The use of radiation in its many forms, has certainly increased tremendously in the last decade. No one can dispute the fact that the future will see a much greater use or abuse of this form of energy. If, as is believed at present, the effect on living tissue is accumulative and additive, even in small dosages, then special precautions and

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recording must be employed to avoid cellular changes in this and future generations.

Roentgen(r) is the international unit adopted in 1937. It is the quantity of x- or gamma radiation producing, in 1 c.c. of air at standard temperature and pressure, ions carrying one electrostatic unit of quantity of electricity of either sign. The maximum permissible dose (MPD) is the dose of ionizing radiation that, in the light of present knowledge, is not expected to cause detectable bodily injury to a person at any time during his lifetime.

For persons between 18 and 45 years of age, whose entire body, or major portion thereof, is exposed solely to x- or gamma rays from external sources for an indefinite period of years, the maximum permissible total weekly dose shall be 0.3 r (300 mr) measured in air at the point of highest weekly dose in the region occupied by the person, (6.25 mr per hour). For persons under 18 years of age who are exposed nonoccupationally to radiation in the course of their normal activities, protective measures shall be taken to make sure that they receive no more than 1.5 r per year.³

The text book term "Daily tolerance dose" has been deleted because no one can state that any amount of radiation is tolerable over a lifetime.⁴ In 1934 the MPD was 0.2 r or 200 mr per day. This was later reduced to 0.1 r, or 100 mr per day, and then to 0.3 r or 300 mr per week. With each year of study there appears to be a further reduction of the recommended maximum permissible exposure. The last handbook from the National Bureau of Standards marks the first time where specified age groups were considered.⁵ No employee at the Oak Ridge plant is now permitted to receive an average of more than 200 mr per week — if 50 mr is reported the cause is investigated.

It would be a mistake to limit the use of x-ray in diagnosis to the point where the dentist was anything less than fully informed roentgenographically about the

patient's condition. At the same time is it not reasonable to assume, that any alterations or adjustments of apparatus or technical procedure, which will enable us to use this instrument well within the limits of safety, and still obtain the necessary diagnostic information, should be adopted and utilized?

X-rays are generated when the electrons travelling at a high velocity are suddenly stopped by the tungsten anode. These rays are electromagnetic vibrations of extremely short wave lengths. These tiny units of energy leaving the tube as x-rays behave similarly to electrons when they strike any substance in their path. When these rays enter the body tissues there is a similar impact action with an energy conversion effect that is either of a scatter form, or an absorption. Some rays may collide with the atomic structure of a body cell, while others penetrate the total thickness and travel on to strike the photographic film. The body cells most affected are those most sensitive to radiation and at the same time in closest proximity to the source of the rays. The x-ray beam is heterogeneous — it is composed of rays of all wave lengths long and short, up to the point of voltage used. The intensity of the rays decrease as the inverse square of the distance. With a very few exceptions x-ray diagnostic work in medicine is done at a minimum anode-skin distance of 36 inches. Here, too, the intensifying screen is used commonly to permit a decrease in exposure time.

So far the use of intensifying screens has been considered impractical in the dental x-ray field. In the publication, "Protection Against X-rays" by the Department of National Health and Welfare, it is required that the equipment should be provided with cones so that the smallest anode-skin distance is normally at least 30 cm. (12 inches).^{5,6} Yet we all know of many instances where x-ray apparatus is in use employing an anode-skin distance of 5 to 8 inches. Remembering the inverse square law it is obvious that the intensity of radiation is consid-

erable in comparison to a medical apparatus of similar output. It also follows that the amount of energy conversion and biological reaction in the adjacent tissues will be much greater because of the high intensity.

The changes in the body tissues as a result of exposure to excess amounts of radiation are of a degenerative nature. There is no evidence that there is ever a stimulating effect. These changes depend on the quality and quantity of radiation and the sensitivity of the tissues. Cells showing the most active metabolism and proliferation are the most readily affected, especially those in the active state of cell division. These include the blood forming tissues, the germinal layers of the reproductive organs, the basal cells of the skin, the growing parts of the eye lens, the endothelium of the blood vessels and the alimentary canal. Radiation causes ionization of the protein molecule. The physiological action of the cell is not affected as much as the reproductive process. If the nuclear chromosomes are damaged to a sufficient degree the cell will die at the time of the next division because of insufficient chromosome material.

When the dentist habitually exposes his hands to the x-ray beam, the germinal elements of the basic skin layer, including the hair follicles and sweat glands, show the first signs of damage. There is a break in the supply of cells that are needed to constantly replace those of the epidermis. Early signs are a dryness of the skin, loss of hair and longitudinal striations of brittle nails. There is a restricted blood supply to the cornium, the lumen of the small vessels is reduced and the nutritional supply lessened. A condition of endarteritis obliterans exists. The epidermal cells multiply more rapidly and send down processes to the dermis in search of a new blood supply. Miototic figures become common. Fissures form in the epidermis with secondary infection and ulcer formation. The prognosis is relatively poor. Often the result is epidermoid carcinoma superimposed on chronic

radiation dermatitis. These changes may develop as early as six months or as late as twenty years. In a group of 194 patients with chronic roentgen ray dermatitis of the hands, 31 per cent finally experienced malignant degeneration of the lesion.⁷

In exposure of 100 r or more there is a decrease in the total leucocyte count detectable within a few hours to a maximum of 72 hours.

When radiation acts on the reproductive organs the greatest damage is produced in the primary spermatocytes. These are destroyed if the exposure is sufficient. This results in a period of temporary sterility. The subsequent germ cells produced will not necessarily be normal. Insect radiation experiments have demonstrated mutations in subsequent generations.

These changes occur in the cycle of damage and repair in the various generative organs. In experiments with small animals the return to normality has been shown to be only apparent. In later life there is a high incidence of neoplastic disease, the length of life varying inversely with the amount of exposure. It has further been shown in experimentally irradiated young animals that the mechanisms of tooth formation and tooth maintenance are permanently destroyed by 2000 to 4000 r doses.⁸ Bruce and Stafne report the injury to the tooth germ and dwarfing of the roots of the permanent teeth in children following irradiation therapy of large amounts.⁹

Before making an oral roentgenographic survey, every patient, children in particular, should be questioned as to previous roentgen ray experience. No authority at this time is ready to say how much radiation is safe for children, but only minimum exposures essential to the health of the child should be advised.

We therefore have knowledge of possible cellular damage to the patient or the operator. We also have regulations set up by the Department of National Health and Welfare and the National Bureau of Standards in regard to the

maximum permissible doses; anode-skin distance; average surface dose per exposure; structural details of protective barriers; operation of apparatus and responsibility of acquainting personnel in regard to hazard.^{3,5,6}

Several points merit consideration in regard to protection of the patient.

1. The primary radiation, useful beam or central ray, as stated earlier, is a heterogeneous bundle made up of all wave lengths from the longest to the shortest produced at the kilovoltage used. The higher the kilovoltage the greater the energy rate of delivery and the more penetration.

2. Filtration is obtained by placing a disc of pure aluminum over the portal through which the central bundle passes. This aluminum disc absorbs or filters out the low energy rays of longer wave length. These are the low penetrating rays that are absorbed by the skin if allowed to remain in the beam. They are ionizing and give over their energy easily to produce a biological reaction. The inherent filtration from the oil immersion and glass tube provides a filter equal to about 0.5 mm of aluminum. An 0.6-1.5 mm disc of aluminum should be added, depending on the capacity of the apparatus, to provide adequate filtration. During measurement of r output, the short, pointed plastic cone was found to be equal to 0.25 mm of aluminum filtration.¹⁰

3. Collimation of the beam is the restricting of the bundle of the useful beam to an area slightly larger than the film area. This is done by use of a diaphragm. A beam that is not collimated will fan out to a diameter of 19 inches at a distance of 10 inches from the cone tip. A properly collimated beam has a diameter of approximately 3 inches at the end of the cone and at a distance of 10 inches the beam diameter has increased only 1 inch. Collimation is obtained by placing a lead disc, one sixteenth inch in thickness, in the tube end of the cone. This lead disc has an aperture large enough to allow the useful beam to be a diameter of about 3 inches at the facial end of the cone.

Collimating the beam materially reduces the surface area of skin exposed. It also reduces the amount of scattered radiation generated from dense body tissues or solid objects, e.g. the metal head rest. It definitely reduces exposure to the eye and submaxillary glands.

4. Anode-skin distance. The inverse square law has been previously noted. Surveys have demonstrated that the skin dosage can be reduced from 250 r per minute to 22 r per minute by using a 16 inch anode-skin distance, with a filtered collimated beam in place of a 7 inch distance having no added filtration or diaphragm. A comparison of the short and long cone follows:

SHORT CONE VS. LONG CONE¹¹

Short Cone distance—7 inch pointed cone.
Skin dosage to patient—250 to 350 Roentgens per minute (r/min.)

Unfavorable Factors:

Short cone, large beam, no additional filtration result in:

- Large skin dosage;
- High level of secondary (scattered) radiation;
- Considerable overlapping of skin areas during exposures;
- High intensity of long wave lengths (unusable radiation) to patient;
- High level of exposure to sub-mandibular lymphatics.

Additional disadvantages:

- Roentgenographic images lack definition (detail sharpness);
- Diminished visibility of detail (decreased contrast) from secondary radiation fog on films;
- No latitude in object/film distance (fixed film placements);
- Maximum magnification, especially of zygoma;
- Short-scale contrast and a lack of detail in roentgenograms from using lower kilovoltage range;
- Possibility of patient movement from long exposures.
- Long cone distance — 16 inch extension cone.
- Skin dosage to patient — 22 to 37 Roentgens per minute (r/min.)

Favorable Factors:

Long cone, small beam, additional filtration (0.5 to 1.0 mm. Al added) result in:

- Low skin dosage;
- Low level of secondary (scattered) radiation;
- Minimized overlapping of skin areas during exposures;
- Homogeneous beam; low intensity of long wave length radiation to patient;
- Low level of exposure to sub-mandibular lymphatics.

Additional advantages:

- Maximum definition (detail sharpness) of roentgenographic images;
- Maximum visibility of detail (increased contrast) as a result of minimized secondary radiation fog on films;
- Maximum latitude in object/film distance with no loss in definition;
- Magnification minimized, especially of zygoma;
- Maximum of detail and long-scale contrast in roentgenograms from using higher kilovoltage range;
- Short exposures preclude patient movement. Movement is not critical.

5. The total time the patient is exposed depends on at least six points.

a. The number of films for a complete intraoral survey seems to vary from 14 to 30. This of course is the option of the operator and must be limited by his conception of what constitutes a complete survey.

b. The anode-skin distance has been discussed above. An increase in distance does not necessarily mean squaring the exposure time. The improvement in film speeds and processing solutions can compensate to a considerable degree.

c. The radiation energy used. Contrary to what might be assumed, a high energy radiation properly collimated and filtered is much more efficient and causes less tissue absorption than a diffuse heterogeneous beam of lower energy.

d. The use of the fast emulsion films now available aid in a marked reduction of exposure time, even with the increased anode-skin distance. Some films still seem fairly coarse in grain but the manufacturers are constantly striving for a faster emulsion that will not sacrifice quality of image. In a series of a 28 film surveys there can be a reduction in total exposure time from 92 seconds to 18 seconds by use of fast film and higher KV.

e. The newer processing solutions are an improvement. Exposure time can be reduced

by developing for the full 5 minutes at 68° F. instead of the shorter time advised by the manufacturer.

f. A well organized, systematic and definite technique will tend to reduce the number of retakes.

In the light of our present day knowledge there is no reason for the dentist or any office personnel to be subjected to radiation. It is hard to understand the philosophy of those who still hold the occasional film in the mouth and in the beam. It is not much less dangerous to put on a leaded rubber glove, the operator is still standing in the field of scattered radiation if not in the path of the useful beam. This seems to be done more in endodontic procedures than in other branches of dentistry. The patient can still hold a film under a rubber dam or a combination clamp and compound bite block can be devised that will hold the film in any desired position and can be repositioned for subsequent exposures. Manufacturers do not make the timer cords of sufficient length. Any timing device or activating switch that hangs on the panel of the x-ray apparatus is an unsafe gadget. The timer or switch should be permanently fixed on a wall that is protected by a lead barrier of the required thickness or on a wall that is sufficiently distant or thick to give absolute protection to the operator while the apparatus is activated. If the timer is fixed on a wall in another room, a mirror can be placed at the correct angle so that the patient and meters can be checked during an exposure. It is the responsibility of the dentist to acquaint all personnel in the office of the hazards of ionizing radiation. The dentist's procedure in this field should be exemplary.

SUMMARY:

1. X-ray apparatus is universally used in dental offices.

2. Progressive study of the effects of radiation on living tissue has brought about a reduction in the maximum permissible dose.

3. It is preferable to use this diagnostic

tool within safe limits rather than limit its use.

4. Prognosis in cases of roentgen ray dermatitis is poor.

5. It is the responsibility of the dentist to know the regulations regarding the operation of roentgen ray apparatus.

6. Filtration, collimation and long cone should be used to protect the patient.

7. Office personnel must definitely work outside the effective field of primary and secondary radiation.

Acknowledgement is made of discussions and consultations with Gordon M. Fitzgerald and Theo S. Grant, Department of Oral Roentgenology, University of California, Medical Center, San Francisco.

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Emergency endodontic treatment for anterior teeth of children

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One of the most disturbing problems encountered by the dentist is that posed by the child with the fractured anterior tooth. Accidents are part of the life of a hospital where a number of staff members are always present to give emergency treatment to the injured. If one physician is busy another can direct treatment, but the dentist is all alone. That statement is hardly true as the dentist usually has a full schedule of patients when the accident victim is ushered through the door. This is a time for diplomacy on the part of both the

dentist and the assistant. Patients must be informed that an accident case receives priority over all treatment given in the office. If the dentist is in the midst of an operation which cannot be deferred the patient should be given a drug which will quieten the nervous system while awaiting the conclusion of the operation. Accidents to the teeth of children are generally associated with sports. Hockey, football, baseball, basketball and playing tag contribute a steady quota of accidents, but bicycles and automobiles are also responsible for all too many fractured teeth.

Fractures may vary from the simple destruction of the corner of a tooth, to

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the fracture which not only results in the mass splintering of the crown, but also extensive soft tissue laceration. It is this latter case which causes many dentists concern. Endodontics is enveloped in an atmosphere of sterility in much the same manner as surgery within the operating room of a hospital. The surgeon who is meticulous about his procedure in the operating room would not wait to be sure that everything which he touched was sterile if he suddenly came upon a roadside accident and offered his help. He would render first-aid using that which he had at hand in the best manner possible. In like manner the dentist is sometimes called upon in his office to render first aid to his young patient. A definite plan should be followed to assure the best results. It is wise, if possible, to keep the parent out of the operating room during the examination. The mother is often in a semi-hysterical condition as a result of the disfigurement which she sees in her child. The assistant can provide a good excuse to keep the parent occupied by detaining her at the desk while she completes the case history chart. The dentist should talk very quietly to the child as he places a surface anaesthetic on the tissues of the involved region. This step is followed by using a very fine needle to place an anaesthetic in the tissues. A 28 gauge needle will slip into the tissue with hardly any sensation to the patient. As soon as anaesthetic has been obtained take several radiographs to assist in the treatment plan. By this time the assistant will have completed the history chart and assured the parent that she will be invited into the operating room as soon as the examination is completed. While the assistant is processing the radiographs the dentist should wash the mouth thoroughly with tepid water to remove debris which may be present in the soft tissues. If there is a photographic set-up in the office this is the time to take color records of the case before treatment. Many patients have been grateful to dentists for the benefit of transparencies when used as evidence

in a court of law. A study of the radiographs may now be made and particular attention paid to possible transverse fractures of the roots. The parent may now be invited into the operating room where the extent of the damage can be disclosed. It is wise for both dentist and parent to retire out of hearing of the child while the course of treatment is discussed, but the assistant should remain to talk with the child while the dentist is out of the room. If the pulp is widely exposed in a root which is fully formed, it should be removed at this visit. All too often a child is dismissed from the office with some form of cement covering a dressing over the pulp. The cement loosens in a short time and the little patient suffers torture for several days while the dentist tries to find a space in his appointment book to commence treatment. It sounds like heresy to say that the rubber dam is not essential but remember that this is a first aid treatment. Relief of pain is of prime importance. As an actual fact there are few instances in which the rubber dam cannot be placed. The rubber dam in this case is not used as a protection against contamination but rather as a means of preventing the accidental passage of an endodontic instrument down the throat of the patient. The accident may have resulted in the fracture of a maxillary central and lateral incisor at the gingival margin. In such a case cut a slit in the rubber dam to disclose the damaged teeth, punch holes in the rubber to admit the remaining anterior teeth, place a cotton roll under the lip and use bicuspid or molars to hold the clamps. A combination of cotton rolls and rubber dam may be used in isolating the fractured mandibular teeth. One such plan is to place cotton rolls on the labial and lingual of the teeth, cut openings in the rubber to admit the teeth, and use a cotton roll holder and a "U" frame to hold the rubber dam in place. Sometimes the use of the rubber dam is impossible. In such a situation long handled instruments should be used as it is almost

impossible for the patient to swallow such an instrument. The radiograph will show the development of the root and the approximate diameter of the root-canal. Select a barbed broach, slightly smaller than the diameter of the root-canal, and remove the pulp. If the teeth are in the mouth of a seven or eight-year-old child, and a pulpotomy cannot be performed, it may be necessary to wind several barbed broaches together to form a "gang hook" in order to remove the pulp. When the pulp has been removed irrigate the root-canal with warm water from an all-glass syringe equipped with a large gauge needle. If haemorrhage persists it is a sign that a portion of the pulp still remains in the root-canal. Dry the root-canal with large paper points and then seal in a fresh, short, paper point which has been moistened with a mild germicidal drug such as campho-phenic. Use a permanent cement to seal the orifice as it may be several weeks before further treatment is undertaken. Occasionally it may be necessary to splint or ligate the teeth but in the majority of cases this is not necessary. Now that the first aid treatment has been rendered, the patient made comfortable, and the mother reconciled to the fact that conditions might have been much worse, the dentist can prescribe sedative drugs which will assure a night's rest and the patient is sent home. If there has been extensive tissue laceration it is advisable to refer the child to the family physician for further general treatment. The important fact to remember when such an injury appears in the office is that this is a first-aid visit. After all the wounds have healed the child can return to the office for a thorough study of the damage. At that time if it is felt that the roots may be retained, the rubber dam can be placed, a sterile field secured, and the root-canals subjected to treatment as in the case of any infected pulpless tooth.

How many dentists at some time in their lives have had the assistant draw them aside from a patient to tell them that a little boy is standing in the recep-

tion room, holding a recently knocked out tooth in his hand. He knows that if he works fast he can replant that tooth in the socket, and although the root will probably resorb, he knows that it will make an efficient space maintainer for several years. Every dentist should have a plan of action ready for just such an emergency. There is no time to read books on the subject or to discuss the procedure with another dentist. Time is the essence of success. The first step can be executed by the assistant as the dentist completes the treatment for the patient already in the chair. She will carefully cover the root of the tooth with a double layer of gauze saturated with normal saline solution and then imbed the root in a block of plaster. Before the plaster has completely set she will carve the block so that about 2 millimetres of the root-tip remains disclosed. By the time the plaster has set firmly the dentist is ready to eliminate the contents of the root-canal, enlarge the canal to the desired diameter, sterilize and finally obliterate the root-canal. In the maxillary anterior teeth a No. 6 silver point is excellent for this purpose and in the mandibular anterior teeth a No. 4 silver point fills the root-canal firmly. The heavy silver point is more acceptable than gutta percha in that it acts as an implant metal post when resorption occurs and as a result the tooth is retained for a longer period of time than would otherwise be the case. Before the root is removed from the plaster block the apex should be polished back two millimetres so that the root will go to place easily in the socket. The injured region is carefully anaesthetized and all portions of the blood clot thoroughly removed from the bone socket. When the socket is cleansed of all debris a fresh blood clot is encouraged, the tooth is seated firmly to place and held under pressure for several minutes. This is one place where the spot welder is of great value. It takes only a few minutes to fashion a stainless steel band, spot-weld a short retaining wire to it and cement the splint to place. If a

spot welder is not part of the equipment of the office the tooth can be ligated to position, an impression taken, and a form of bite-plane with a retaining wire made to act as a splint. It seems to be a fact that these teeth return to normal function much better if they are not solidly splinted as is the case when a cast retainer or edgewise splint is used.

One of the emergencies sent to try the dentist is provided by the little patient of seven or eight years of age who fractures an anterior tooth so that the pulp is widely exposed. Such a tooth is not yet completely formed and every effort must be made to secure completion of the calcification process. Every office should have chemically pure calcium hydroxide available for such an emergency. While the radiograph is being processed an anaesthetic should be placed about the involved tooth. Be sure to use that 28 gauge needle to avoid distress to the child. In the maxilla, position the rubber dam by holding it with a S.S.W. No. 27 clamp placed sideways upon the tooth. This bicuspid clamp will hug the crown at the gingival and hold the dam firmly. The mandibular tooth is more of a problem as at this age there is little of the crown to grasp. Once again the spot welder proves of great assistance. Fit a band of stainless steel and cement it to place upon the crown. The jaws of the S.S.W. 211 clamp will grasp the metal or even slip below the band to hold the rubber dam securely in position. Sometimes it may be necessary to disclose all the anterior teeth using the primary molars to hold the clamps. Wash the rubber dam with an antiseptic such as benzalkonium chloride. Cleanse any debris from the tooth surface with sterile warm water. Complete the removal of the roof of the pulp chamber and with a sharp, sterile round bur sever the pulp at the point of constriction marking the entrance to the root-canal. Place a pledget of cotton moistened with sterile water over the cut pulp while the calcium hydroxide is being mixed to a heavy consistency with sterile water or the remainder of the anaesthetic solution. Re-

move the cotton and tease this paste over the cut pulp to a depth of several millimetres. Touch a portion of blotting paper to the surface of the paste to hasten withdrawal of water content and consequent setting time. Then cover the paste with crown and bridge cement. Arrange to see the youngster in two months when a radiograph should disclose a firm dentine bridge. Once again time has been an important factor, for every hour saved between the time of the accident and the prosecution of the pulpotomy makes the prognosis for success that much greater.

Another emergency which demands immediate attention is found in the tooth which is so painful on pressure that the patient cringes at the very approach of the dentist. The radiograph may show nothing abnormal which adds to the difficulty of correct diagnosis. Time and again a child is condemned to a night of misery because the dentist saw a cavity in the crown of the tooth, jumped to the conclusion that he was dealing with an inflamed pulp, placed a sedative drug under cement and dismissed the patient. The dentist did not realize that the pulp in that root was putrescent, that the pain came from the pressure within the root-canal, and that all he had to do was make a small opening into the pulp chamber to bring a smile back to the face of his little patient. Research has provided dentists with excellent means for determining if a pulp is vital or necrotic and it seems rather cruel that children must suffer because of lack of such equipment in the office. If there is no cavity in the crown of the tooth the opening into the pulp chamber should be made through the lingual fossa. The opening should be made by a small round diamond point, run at maximum speed with light pressure. Keep the index finger of the left hand firmly upon the labial surface of the crown to compensate for even light pressure from the lingual. Make the entry into the pulp chamber with the round diamond point alone. Do not stop after passing through the enamel to change to a bibevel drill as is customarily done

in non-paining teeth. When the pulp chamber has been penetrated and drainage established do not place any cotton in the opening. If cotton is placed in the orifice it will clog with the exudate, and in half an hour the child will suffer a return of pain. When all acute symptoms have subsided treat the tooth as one with an infected necrotic pulp.

Occasionally a child will withstand the pain until an accumulation of pus is evident in the labial tissues. This is no time to drill into the pulp chamber of the tooth with the necrotic pulp. A sharp penetration of the palpable mass will cause a spurt of pus and give almost instant relief. Place the child on a programme of forced liquids, prescribe a saline laxative and a sedative and send the child home. Twenty-four hours later the opening can be made into the pulp chamber with no discomfort to the child. Routine administration of antibiotics in acute alveolar abscesses is absolutely unnecessary. Thousands of such cases were brought to a happy solution over many years when the term antibiotic was known to very few. Some day in the future that child may need all the powers of the antibiotic world to save her life and it would be tragic if indiscriminate use of such drugs over the years reduced her chances of survival.

It is important that the dentist recognize those signs which indicate the presence of an inflamed pulp within a tooth. A child may be made an apprehensive patient for life if the dentist drills into the pulp chamber containing a vital pulp in the mistaken belief that that pulp is necrotic. Ice provides an excellent means of determining the vitality of a pulp. If ice is not available ethyl chloride may be sprayed upon a large burnisher until it is coated with frost, and the burnisher then laid across the surface of the tooth. If cold accentuates the pain there is good reason to believe that the pulp is in the earlier stages of acute inflammation. This is the situation which requires placement of a pad of eugenol over the pulpal wall. Such a dressing sealed securely under

cement will bring relief to the patient. However, the dentist should not be content with this treatment alone. There is certain to be development of a pericementitis unless counter-irritant treatment is given. This counter-irritation may be provided by the use of intra-oral poultices. Finally remember that the little patient has had very little sleep for quite a time and a general sedative will be appreciated both by the child and the tired parents.

The final emergency which plagues the dentist is found in the tooth which has actual abscess formation in the still vital pulp. In this case the child is suffering a continuous throbbing toothache. The diagnostic signs show that the pain is increased by cold but accentuated to a much greater degree by the presence of heat. An acute pericementitis is almost always present and the tooth is so tender that the child will hardly allow the dentist to examine it. This root contains a vital pulp and therefore an anaesthetic will be of great value. Use a surface anaesthetic and follow with the fine gauge needle. Above all do not hurry but rather move quietly and with an assurance that will quieten the apprehension of the child. Deep caries are almost invariably present which makes penetration of the pulp chamber a less difficult procedure than would otherwise be the case. The opening into the pulp chamber should be made with the smallest round bur in the cabinet. If the bur is held in a miniature handpiece there will be less chance of the handpiece touching the tooth and disturbing the child. When the pulp chamber is entered there usually appears a small trickle of pus mixed with blood. Encourage this flow by washing the area with tepid water. This action will reduce the pressure within the pulp chamber and the pain which has resulted from it. Carefully dry the area with cotton pellets and lay a pad of cotton soaked in a 50-50 solution of eugenol and beechwood creosote over the pulpal wall. Seal the dressing with cement, instruct the patient in the use of intra-oral poultices and pre-

scribe a sedative. Dismiss the patient for two or three days. Under no circumstances should the pulp be removed at this time as infection may be driven into the deeper tissues with serious results.

The emergency caused by injuries to the teeth of children will be a familiar trial in the office of the dentist just as long as children run and play. The line

of least resistance is to reach for the forceps but the dentist who does this will never know the joy of having a happy adult say, "remember Doctor when I fell and broke my tooth so many years ago. Mother and Dad thought that it would have to be taken out but you saved my tooth. I was a mighty lucky girl to have you as my dentist".

The epidemiological method as a research tool in dental caries

by D. M. HADJIMARKOS, D.D.S., M.S.D., M.P.H.*

In the search for understanding the factors associated with dental caries attack and resistance and for developing preventive methods and techniques against this disease, the following two avenues of investigative approach have been mainly utilized: (a) clinical studies in man and (b) laboratory studies including experimental animals. A third approach for studying dental caries and one which in dentistry has not yet fully attracted the interest that it deserves as a research tool, is the epidemiological method.

According to Gordon,¹ "epidemiology has to do with diseases of man as they affect populations of people. It differs from clinical medicine principally in the unit of study, which is a group of people considered as a whole, the sick and the well, in contrast to the individual patient". Clark² defines epidemiology "as the sci-

ence concerned with the study of factors that influence the occurrence and distribution of disease, defect, disability, or death in aggregation of individuals".

One of the objectives of the epidemiological method is to collect and provide information as to the manner in which the disease is manifested in population groups in relation to age, sex, race, occupation, geographic area, etc. This is expressed in terms of prevalence of disease (number of cases which exist at one time) and incidence of disease (number of new cases which arise during specific intervals of time), and is referred to as descriptive epidemiology. However, since occurrence of mass disease is recognized as a biological phenomenon resulting from the interaction of a triad composed of (a) the host, (b) the agent of disease and (c) the environment, a second important function of the epidemiological procedure is the elicitation of disease causation through analysis and correlation of the various contributory fac-

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tors. This phase is referred to as analytical epidemiology².

In general, the employment of both the descriptive and analytical phases of the epidemiological procedure in the study of mass disease as it occurs under natural conditions, contributes to a better understanding of disease causation and thus to formulation of effective preventive and control measures.

The application of the epidemiological method to the study of mass disease in man was originally confined to the field of communicable diseases. Today, however, the epidemiological approach has been expanded to include a wide range of mass disease and disability of non-infectious nature. This concept is based on the premise that all mass diseases, whether infectious or non-infectious, are governed by the same biological laws resulting from the interaction among the host, agent of disease and the total environment (physical, biological, social). As a result of this, the epidemiological approach has been utilized for studying nutritional deficiencies, multiple sclerosis, diabetes, accidents, mental disorders, etc. In the field of dentistry epidemiological principles and methods have been applied in recent years to such areas as endemic dental fluorosis, caries, and periodontal disease.

Obviously, since behavior of mass disease and disability is influenced from the interplay among the host, agent, and environment, the variety of factors which contribute to disease causation constitutes a complex problem and requires the coordinated efforts from different fields of medical, biological and social sciences for its thorough understanding.

Thus, it may be stated that the epidemiology of dental caries is concerned (a) with an orderly collection and systematic analysis of data regarding the manner in which the disease is manifested in population groups and (b) with the study of the different contributory factors or conditions which influence the distribution and occurrence of the pathosis in a community. The ultimate goal is

the application of effective preventive measures through a better understanding of disease causation.

CARIES EXPERIENCE INDICES

The development of appropriate quantitative measurements or indices for assessing the tendency of a population group to be attacked by caries is a basic prerequisite for the successful application of the epidemiological method to dental caries research. Such indices have been devised and are now in use for obtaining and expressing the dental caries experience in groups of people, in terms of prevalence and incidence of the disease, separately for permanent and primary teeth and also by specified age groups. The employment of the epidemiological method as a tool in studying dental caries has been greatly enhanced by the introduction in 1937 of the D.M.F. index (Decayed, Missing, Filled) by Klein and Palmer for measuring prevalence and incidence of this disease in population groups.³

The caries experience in the permanent teeth of a population group may be expressed in the following three measuring standards or indices, depending on the scope and nature of the investigation at hand: (a) percentage of persons showing evidence of caries, (b) number of D.M.F. teeth per person, and (c) number of D.M.F. tooth surfaces per person.

One of the characteristics peculiar to dental caries attack is that the occurrence of the disease is bilaterally equal. This has been observed in a number of studies among humans and also in laboratory animals.⁴⁻⁸

The phenomenon of the bilaterally equal occurrence of caries can be utilized profitably in epidemiological studies for collecting prevalence and incidence data on the disease in terms of D.M.F. teeth and tooth surfaces. The D.M.F. index of the population group under study can be readily obtained by limiting the observations on either side of the mouth of the individuals composing the group and

multiplying the results by two. Thus, the utilization of this procedure provides reliable data on caries experience with considerable saving in time, funds and personnel.

In addition to the above described methods, it has been demonstrated by Knutson⁹ that there is a close association between the percentage of persons, by age groups, showing evidence of caries attack and the average number of D.M.F. teeth per person. In population groups where their dental caries experience is not too high it is possible from the percentage of persons in each age group showing evidence of caries to make an accurate estimate of the average number of D.M.F. teeth per person. The employment of this method where it is indicated has obvious advantages in terms of time, personnel and funds saved.

The indices used for expressing caries experience in the primary teeth of population groups are essentially the same as those described above for the permanent teeth except for a slight modification. This modification is necessitated by the fact that in many instances it is difficult to decide whether a primary tooth is missing because of caries or as a result of physiological exfoliation and also whether the tooth has or has not been attacked by caries prior to the exfoliation. Thus, it is generally agreed that in collecting data on caries prevalence and in primary teeth observations are confined only to teeth present in the mouth at the time of the examination.¹⁰

The caries experience in the primary teeth of a population group may be expressed in the following three measuring indices: (a) percentage of persons showing evidence of caries attack, (b) number of d.e.f. (decayed, extraction indicated, filled) teeth per person, and (c) number of d.e.f. tooth surfaces per person.

APPLICATION OF THE EPIDEMIOLOGICAL METHOD

Although the application of the epidemiological methodology to the study

of dental caries in man is still in its early stages, the usefulness of this approach as a research tool has been amply demonstrated from a number of studies conducted during the last two decades or so. By far, however, most of the epidemiological investigations on caries have dealt with and utilized mainly the descriptive phase of this research method, i. e., prevalence and incidence of the disease. An excellent example of the employment of this phase of the epidemiological procedure in the study of caries is the well-known investigations of Klein and co-workers conducted among children in Hagerstown, Maryland.¹¹

As a result of such investigations, valuable data has been gathered which revealed some characteristics peculiar to dental caries attack in regard to age, sex, race, tooth morphology etc., and also made possible comparisons between various population groups of caries prevalence and incidence rates.

The employment of the analytical phase of the epidemiological method has not been extensively utilized for the study of dental caries. A classic example of analytical epidemiological procedure in this area are the studies conducted by Dean and his associates which have shown conclusively that an inverse relationship exists between minute amounts of fluorides occurring naturally in public water supplies and the prevalence of caries in children.¹² These studies served as the basis for the present practice of fluoridation of the public water supplies.

However, despite the great potentialities offered by the analytical phase of the epidemiological method as a means for a better understanding of the factors having a bearing on caries susceptibility or immunity, it has not as yet fully attracted the interest of research workers. In this connection, the following statement made by Dean in a paper presented recently at the Workshop on Preventive Dentistry held at the University of Indiana Dental School is of paramount importance: "The dynamics of dental caries

attack on populations showing different prevalences is still a challenging subject for the dental epidemiologist".²³

During the last few years, a series of studies on dental caries were conducted by the author among selected population groups in the State of Oregon, utilizing the epidemiological method of approach (both descriptive and analytical phases)¹⁴⁻²¹ These investigations are of particular importance because they are the first to have been conducted in the Pacific Northwest section of the United States.

The State of Oregon presents unusual opportunities for epidemiological studies on dental caries because of its extreme variability in climatology, agriculture, and topography. The Cascade Mountains divide the State of Oregon into the western and eastern parts which are distinctly different. The characteristic features of the eastern part include low precipitation, high altitudes, more days of sunshine, and vegetation adapted to arid and semi-arid climatic conditions. On the other hand, the topographical, climatological, and agricultural features of western Oregon are opposite to those found in the part of the state east of the mountain range. In addition, it is known that the vast majority of the public water supplies of Oregon does not contain any appreciable amounts of fluorides.

These studies were conducted in 10 counties of Oregon located east and west of the Cascade Mountains. Altogether, dental examinations were given to 2,069 school children 14-16 years of age who were born and lived continuously in their respective counties. The examinations of all the subjects were made by the writer. The importance of this procedure is of great significance since variations in diagnostic criteria are thus minimized and the uniformity of the collected data is preserved. The caries experience of the children was measured in terms of D.M.F. teeth.

In general, the findings disclosed that children born and reared in the counties located west of the Cascade Mountains

were more susceptible to caries attack (11.8-14.4 D.M.F. teeth) in comparison with those living continuously east of the mountain range (9.0-11.3 D.M.F. teeth).

For an explanation of the geographic variations in caries prevalence rates observed among the children, the following environmental factors were investigated:

1. fluoride content of the public water supplies in all the countries, together with a retroactive investigation into the histories of the water supplies, 2. total hardness of the public water supplies, 3. ratio of dentists to population, 4. amount of candy bars and carbonated beverages consumed, 5. amount of sunshine available, in combination with altitude, in each of the counties, and 6. the role of the trace element selenium.

In summary, two significant findings were observed: (a) an inverse relationship between amount of sunshine available in an area, in combination with altitude, and caries prevalence rates and (b) a direct relationship between urinary selenium concentration and susceptibility to caries.

An explanation for the observed inverse relationship between the amount of sunshine available and caries prevalence is that the biologically effective component of the ultraviolet radiation of the sun (3,150 Angstroms and shorter) stimulates the production of vitamin D by acting on the provitamin present under the surface of the skin of the individual. There are indications in the literature that an adequate intake of vitamin D during the calcification period of the teeth renders them more resistant to caries attack, all other factors being equal.²²

In regard to the trace element selenium, the findings indicate that, in a manner as yet unknown, this trace element may render the teeth more susceptible to caries attack. The trace element selenium is a normal constituent of the soil and its presence has also been detected in waters. It is known that selenium is absorbed from the soil by all vegetation and it is presented in detectable amounts

in all wheats.²³ By experiments on laboratory animals, it has been shown that the excretion level of selenium in the urine has a definite relationship to the amount ingested²⁴ from some reports in the literature, dealing with humans and experimental animals, it has been suggested that selenium may be a factor in caries susceptibility.^{25, 26}

With the exception of the trace element fluorine, the possible inhibitory or harmful effects of other trace elements on the prevalence of dental caries in population groups have been largely unexplored. That this area presents a promising and fertile field for epidemiological studies in dental caries has been indicated from the results of a study conducted by Sognnaes.²⁷ He made a spectrographic analysis of a natural stock diet fed to rats and also of the teeth of rats developed during the consumption of the same diet. Sognnaes found that the diet as well as the teeth of the animals contained ten trace elements the influence of which on caries is not known.

CONCLUSIONS

From all the above mentioned, it becomes apparent that the judicious application of the epidemiological procedures to the study of dental caries offers unusual opportunities and opens new and unexplored investigative avenues for a better understanding of the factors associated with susceptibility or immunity to this universal disease.

However, it should be emphasized that the epidemiological method of investigation is not an end in itself. It rather complements the other two methods of research, i.e., the clinical and laboratory studies. In our efforts against dental caries the best results will be obtained by a collaboration of all three methods of research.

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Maxillary developmental cyst with respiratory epithelium

by HENRY A. THOMPSON, D.D.S., B.Sc.D., H. A. HUNTER, D.D.S., M.Sc.D., and J. H. GRISS, D.D.S., Toronto

A Case Report

The patient was a 38-year-old nervous, over-worked business man with no history of poor health except for poor clotting of blood, and deep eye pains.

His principal complaint was acute pain and tenderness with swelling in the upper right maxillary area between the lateral incisor and cuspid. All the upper teeth had been removed some five years previously owing to periodontal disease and caries, and in an attempt to relieve the eye pains. A complete upper denture had been constructed at this time, and at presentation this was uncomfortable due to rocking and pain in the upper right cuspid area. The eye pains had persisted.

After consultation and x-ray examination (see Fig. 1) it was decided to remove, under general anaesthesia, what was thought to be an acutely inflamed residual cyst.

At operation the overlying mucosa of

approximately 2½ by 1½ cm. was removed and a large meaty mass about 2 cm. in diameter was enucleated in one piece. It contained some fluid with cholesterol crystals which indicated a cyst, but the fleshy nature of the lining did not look like that usually found in dental cysts. Bleeding was profuse despite the intra-muscular injection of Synkavite (vitamin K) pre-operatively.

There was a small perforation of the nasal floor and the maxillary antrum, but in neither case was the lining mucous membrane perforated.

The excised lesion and the overlying oral mucous membrane were immediately placed in 10 per cent formalin solution and sent to the pathology laboratory for examination. The report was summarized, "Acutely inflamed developmental

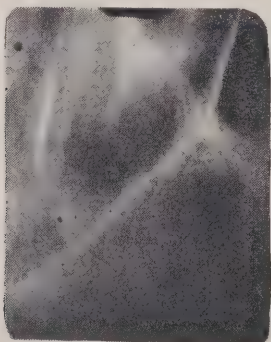


FIGURE 1

Radiogram of a globulo-maxillary cyst in an edentulous upper jaw. The cyst outline is not clearly shown due to long standing chronic infection. Its proximity to the nasal floor and maxillary sinus is clearly seen.

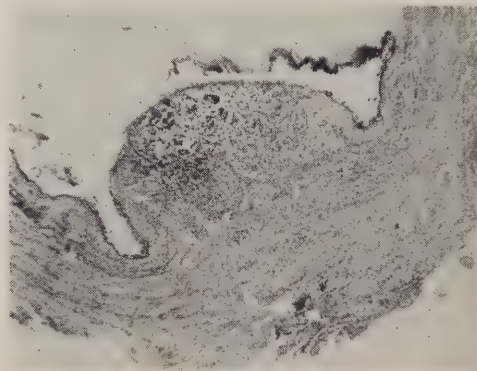


FIGURE 2

Low power photomicrograph of cyst lining showing pseudo-stratified columnar epithelium, with adjacent connective tissue intensely oedematous and infiltrated with leucocytic round cells. On the outside is seen bundles of collagen arranged in circumferential manner and also quite oedematous.



FIGURE 3

Same—high power study.

cyst with respiratory epithelium." (see figs. 2 and 3)

The lips of the incision were circumferentially sutured to control capillary oozing. Dressings were inserted and changed daily. Synkavite 10 mg. was injected daily and Ferro-phytine (Ciba) was prescribed until bleeding was under control.

Healing was slow and painful but three weeks post-operatively it was sufficiently progressed to permit the completion of new dentures. The eye pains had disappeared, and the patient was happy and comfortable.

The particular interest of this case was the unusual nature of the cyst lining. Developmental (globulo-maxillary or fissural) cysts in this location have been reported. Ingram (1950) described them as, "... inclusion dermoids in the fissure between the naso-frontal process medially and the lateral maxillary process," but made no reference to the type of epithelial lining. Thoma (1952) gave several case histories of globulo-maxillary cysts, but all had linings of stratified squamous epithelium (oral epithelium).

Worth (1956) stated in correspondence on this case that he has seen cysts with respiratory epithelium in the walls, and Bernier (1955) also mentioned the presence of respiratory epithelium in globulo-maxillary cysts, but no case histories were given.

This report is presented both as an interesting surgical problem and as a record of the academic point that globulo-maxillary inclusion cysts may originate from a pinching off of respiratory type epithelium as well as from the more usually encountered oral (stratified squamous) epithelium.

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- Worth, H. M. Personal communication 1956

A group of children in a residential home were examined and saliva specimens collected at intervals during one and a half to two years. Lactobacillus counts and Snyder's colorimetric tests for caries susceptibility were carried out to determine the relationship of these tests to dental caries occurring during the period. In the main part of the enquiry 84 children were observed for one year. There was no definite association between the lactobacillus count or Snyder's test and the development of caries in the following six to twelve months. On the basis of the tests it was not possible to forecast the incidence of dental caries.

Geoffrey L. Slack, O.B.E., T.D., F.D.S., R.C.S., D.D.S., Dipl. Bact. and W. J. Martin, D.Sc.
British Dental Journal, Aug. 21, 1956.

ABSTRACTS

Clinical problems in the use of alginate hydrocolloid

by KENNETH R. PFEIFFER, D.D.S.

The Journal of the American Dental Association, September 1956.

At the National Bureau of Standards, tests were applied to five different brands of agar-agar hydrocolloid and five different brands of alginate. The tests consisted of inducing a 12 per cent strain into identical specimens of the various material and then calculating the percentage of set (permanent deformation). After the strain tests, the specimens were subjected to compressive strength tests.

The results of these tests indicated that the alginate hydrocolloids possess a slightly higher percentage of set and about twice as much compressive strength as the agar-agar hydrocolloids. When these results are applied to clinical practice, it would be expected that there would be less possibility of tearing in removal of an alginate impression from the mouth and that no distortion would be encountered during the process of pouring the stone model. The more intricate, thin and delicate were the impression areas required, the more the strength of the alginate could be relied on for excellent clinical results. It might seem that the agar-agar hydrocolloids, since they show the least percentage of set from an equal amount of induced strain, lead to more accurate and superior results. This deduction is not necessarily true in view of the fact that there is no scientific data indicating the amount of induced strain involved in each crown, inlay or bridge impression. Since undercuts should not be present in such precautions,

however, the induced strain is minimized and the alginate materials could be considered superior because of their greater strength, with all other factors being equal. Proper consideration also should be given to the many variables involved from the impression to the finished restoration.

Some operators have complained of a rough or chalky surface on models produced from alginate impression. This condition can be prevented by the removing of excess thick saliva from the impression, the immediate pouring of the model and the immersing of the poured impression and model in water at the completion of the initial set of the stone, and separating the model and impression about an hour after the pouring period.

Both the alginate and the agar-agar hydrocolloids have their place in dentistry. The test of any prosthetic appliance is in the result. Both the agar-agar and alginate hydrocolloid materials are excellent when used properly.

The alginate hydrocolloid impression materials are contra-indicated when all the margins of the preparations cannot be exposed visually and kept clean and dry during the impression procedure. Such conditions, however, often can be overcome by performing a gingivectomy, placing a zinc oxide-eugenol pack, celluloid crown form or aluminum thimble until healing has taken place and then obtaining the impression at a subsequent sitting.

Emotional Status of Patients with Acute Gingivitis

by HYMAN GOLDBERG, WALTER J. AMBINDER, LAWRENCE COOPER and A. LEONARD ABRAMS
The New York State Dental Journal. Vol. 22—No. 7—August-Sept. 1956.

In order to study the emotional status of periodontal cases, 66 patients diagnosed as (1) acute necrotizing gingivitis, and (2) gingival periodontitis and occlusal traumatism) were seen at the Neuro-psychiatric Clinic for testing and interviewing. On the basis of rated interviews it was found that patients in the acute necrotizing gingivitis group tended to have a more disturbed personality adjustment than those in the gingivitis group. Prior to the current attack a significantly greater proportion of the acute necrotizing gingivitis group had some emotional stress which may have precipitated this episode. There was no

check on either the validity or reliability of the interviews. Results of testing the groups with the Minnesota Personality Inventory and the Word Association Test did not reveal any personality differences between the groups. It was felt that the tests were not particularly suitable for use in this problem, although an alternative explanation could be that the tests were "right" and the interviews were invalid.

The authors feel that the continued tension or stress which the acute necrotizing gingivitis patient encounters tends to aggravate the precarious psychological adaptation of the patient.

Urinary Fluoride Levels Associated with Use of Fluoridated Waters

By I. ZIPKIN, Ph.D., R. C. LIKINS, D.D.S., F. J. McCLOURE, Ph.D., and A. C. STEERE, B.S.
 U.S. Department of Health, Education and Welfare. *Public Health Reports*, August 1956.

The concentration of fluoride in the urine was determined in individuals of different ages who were drinking water fluoridated to approximately 1.0 p.p.m. fluoride with sodium fluosilicate (Montgomery County, Md.) or with sodium fluoride (Grand Rapids, Mich.).

In adults (Montgomery County), the water fluoride and urinary fluoride concentrations became approximately equal within 1 week after the introduction of the fluoridated water. In school children aged 5 through 14 years (Montgomery County) and 6 through 17 years (Grand Rapids), a considerably longer period of time (approximately 3 and 5 years respectively) elapsed before the concentration of fluoride in the urine reached that in the drinking water.

The difference in the response of adults and children during the initial period of exposure to a fluoridated drinking water suggests that the maturity of human skeletal tissues influences its capacity to retain fluoride.

The results of the study do not suggest any essential difference in urinary elimination of fluoride ingested in naturally fluoridated drinking water and the elimination of fluoride ingested in drinking water fluoridated with either sodium fluoride or sodium fluosilicate.

The findings are regarded as evidence that no hazard of cumulative toxic fluorosis is associated with the use of a drinking water fluoridated to contain 1 p.p.m. fluoride.

Balanced Premedication in Paedodontics

by NORMAN BUCKMAN, B.A., D.D.S.

Journal of Dentistry for Children—Third Quarter 1956, Part one of two.

Selected children are relaxed and will readily submit to extensive dental treatment for period up to two and one-half hours without experiencing undue side reactions or psychological trauma, when an easily administered method of premedication, consisting primarily of pentobarbital, scopolamine, and meperidine is used.

The patient is given a capsule or elixir of pentobarbital, orally, about one hour and 15 minutes prior to treatment, followed in fifteen to thirty minutes by a subcutaneous injection of combined meperidine and scopolamine. This balance premedication produces a relaxed, sedated and cooperative patient. Salivary flow is minimal and of no hindrance. The dental visit is not at all unpleasant and, in most cases, the child will be amnesic of the experience. Even though the patient may lapse into sleep, the mental capacity to understand and respond has not been materially diminished since the patient can easily be roused.

This technique is safe, easily administered, and requires no special training. Side effects are few. There is no hazard

of meperidine addiction. Idiosyncrasies and allergic reactions could conceivably be the greatest danger, as they might be with any drug.

The advantages of this technique over general anaesthetic are many and readily apparent. Balanced premedication in conjunction with local anaesthesia is preferable for many procedures for which a general anaesthetic is to be used. It is specially indicated for problem management patients, lengthy paedodontic restorative operations, and oral surgery.

However, general anaesthesia is preferable for short simple procedures in problem children, such as primary dental extractions. Dental instrumentation on conscious individuals requires a certain minimum level of mentality and understanding to enable the patient to cooperate effectively. Therefore, this technique is contraindicated for very young children and mental defectives who cannot follow simple commands.

It should be emphasized that this technique is not to be used in lieu of establishing proper rapport with the patient.

Current Knowledge of Nutrition Relative to the Supporting Dental Structures

by SAMUEL DREIZEN, D.D.S.

The Journal of Periodontology—Vol. 27—No. 4—October 1956.

The contribution of many vitamins to the maintenance of the normal structure of the oral tissues is essentially indirect, affecting as they do metabolic processes within cells rather than constituting an integral part of tissue structure per se. In contrast, deficiencies of calcium, phosphorus and protein directly affect the

structural composition of the periodontium. In animals, experimentally induced pure calcium and phosphorous deficiency results in an excessive resorption of alveolar bone and osteoporosis, in pure protein deficiency there is degeneration of the connective tissue of the gingivae and periodontal membrane, osteoporosis of the

alveolar bone and retardation in the deposition of the cementum. In man, deficiencies of the calcifying minerals and disturbances in protein metabolism contribute to the development of osteomalacia and osteoporosis respectively, in each of which there are detectable changes in the structure of the alveolar bone. The precise effects of pure deficiencies of calcium and/or phosphorus and of single or multiple essential amino acids on the supporting dental structures in the human remain to be determined.

Thus the supporting structures are sensitive to deficiencies of many of the nutrients which are essential for man. In health, these tissues are admirably suited to withstand the stresses to which they may be subjected. In the depleted state, re-

peated exposure to chemical, mechanical and microbial irritants contribute to their rapid breakdown. The ensuing lesions may be localized or generalized in distribution and acute or chronic in course. They are highly individualistic in pattern and rarely take the identical form in different patients. They frequently have a multiple rather than single causation. Deficiencies of borderline intensity or of short duration may occur without the appearance of some or all of the characteristic signs. Conversely, the presence of a "deficiency" sign need not connote a deficiency state since many are non specific in origin. In the diagnosis of these conditions, dietary histories, physical examination and laboratory tests are contributory; response to the specific factor is confirmatory.

The Use of Disinfectants and Antibiotics in Endodontic Practice.

by LOUIS I. GROSSMAN, D.D.S., Dr.med.dent., Philadelphia.

The Journal of the American Dental Association, October 1956.

Repair of periapical tissue will occur regardless of whether a disinfectant or an antibiotic is used for sterilization of a root canal.

Thorough cleaning of the root canal is extremely important.

Root canal infection is often a mixed infection in which three types of microorganisms may be involved — gram-positive, gram-negative and yeast organisms. Most root canal disinfectants will destroy all three types; however, antibiotics have a more specific effect, some being effective against gram-positive organisms, some against gram-negative, and a few against both. As yet there is no commercially available antibiotic effective against yeasts.

The various antibiotics have been tried, either alone or in combination, in endodontic treatment. The most effective

combination is one consisting of penicillin, bacitracin and streptomycin to which caprylate sodium is added.

With only one exception, no allergic reaction to the antibiotics has been observed in many hundreds of cases treated. The explanation for this is possibly that the antibiotics used in the root canal generally are confined to the canal itself, and the amount of antibiotic used is initially small.

No evidence has been observed of acquired bacterial resistance to the use of the polyantibiotic mixture in the root canal.

Disinfectants may be used for pulpectomies, but polyantibiotic mixtures are more effective when severe infection of the root canal is present.

Neither a disinfectant nor a polyantibiotic paste should be carried through the apical foramen into the periapical tissue.

EDITORIAL

Professional criticism—a discredit to the profession

Good public relations are still a vital requisite for any profession or business. These relations are engendered by trust and confidence and are exceedingly more difficult to attain than to lose. In an essential and personal health service such as dentistry provides, it is mandatory that the patients receiving care should place the utmost confidence in those who render the service.

That this trust may be diminished or even shattered is unfortunately all too well known. It should be pointed out however, that often patients may expect omniscience on the part of the dentist and fail to understand the limitation of treatment measures. They do not realize that it is impossible to guarantee services such as are rendered by dentists or physicians, and that it can only be required of such professional personnel that they provide the best attentions of which they are capable.

It is, of course, completely understandable that one dentist under certain circumstances is able to perform a procedure which by any standards would be termed excellent, but under an entirely different set of conditions may render care, which, if the background is unknown, might be considered unsatisfactory.

Even from a legal standpoint this variation has been recognized and if a patient complains of improper care he must show that such a condition resulted from negligence on the part of the dentist concerned.

But how often do some dentists set

themselves up as prosecutor, judge and jury, when considering treatment provided previously for a patient for whom they themselves presently have responsibility? All too frequently we hear of instances where one dentist attempts to disparage the treatment services of one of his confreres. Such an action shows a lamentable lack of good taste, and professional ethics.

One might ask himself what is accomplished when a dentist takes great pains to inform a patient how poorly some previous dentist has rendered treatment. Obviously the first thing that happens is that the patient is chagrined to feel that treatment for which he has paid a fee is unsatisfactory and that he is going to incur added expense in order to have conditions rectified. Then his thoughts probably take him to a conclusion that if one dentist has been so derelict in his responsibilities will another one be any better. And even though the seeds of doubt are sown, honourable people still harbour resentment for someone who has undermined another. Most of us, when purchasing a commodity, admire a salesman who is able to present his own wares without running down the product of a competitor.

It is quite encouraging at times to note among the laity an awareness that a high code of professional ethics exists. Many persons who have been called upon to mediate patient-dentist misunderstandings are struck with the frequency by which patients will remark—"he mustn't

be much of a dentist, the way he ran down the work in my mouth". Most people still have a sense of fair play.

The psychologist perhaps could embark upon long and complicated discussions seeking the reasons which compel some individuals to disparage the care of others. Basically we are sure that such conduct is engendered because of innate feelings of inadequacy and of lack of confidence in their own ability. Experience would appear to indicate that most individuals who make a practice of condemning a confrere's services are those who have achieved little or no professional status themselves. For a brief moment, before an audience of one or two, they are able to show to the world that their superior knowledge and ability would provide a better service than that which the patient has previously received.

One further aspect of this problem may some day have serious consequences. There is little doubt that the last few years have seen a growing tendency of patients to institute legal proceedings for suspected negligence in the health field. All some patients may require to begin such a legal action is a statement from a dentist that the previous services were unsatisfactory. A subpoena to appear in

court on such an issue may be a rather rude awakening.

Obviously if some prior treatment service is unsatisfactory, it is the obligation of the practitioner, whose care the patient now seeks, to render such attention as will rectify the condition. There are times, admittedly, when it may be very difficult to explain why a particular treatment must be given. But a direct condemnation of another's efforts, especially without a full and complete knowledge of all facts and circumstances, is certainly unwarranted.

Subsections (a) and (b) of Section VII of the Canadian Dental Association's, "A Guide to Professional Conduct", bear repetition:

"In his relationships with his colleagues, every dentist should behave in such fashion as he would to a brother, doing and saying only things which he would appreciate from others. It is most unethical for any dentist to pass judgment on the qualifications and procedures rendered by his confreres, except as such comment shall be to the mutual benefit of all concerned."

Criticism of another's service is unkind, unfair, and unethical. "As ye would that men should do to you, do you even so to them."

The Library

Additions

- ANDERSON, J. N.: Applied dental materials. 1956. 422 p. illus.
 ANSON, B. J.: The anatomy of the head and neck. 1956. 101 p. illus.
 BIRD, B.: Talking with patients. 1955. 154 p.
 CRADDOCK, F. W.: Prosthetic dentistry. 3rd ed. 1956. 403 p. illus.
 FREDERICK, P. M., and TOWNER, C.:

The office assistant in medical or dental practice. 1956. 351 p.

HEWAT, R. E. T., and EASTCOTT, D. F.: Dental caries in New Zealand; report of an epidemiological and racial study. 134 p. tables and figures.

MARSHALL, L. L.: The art of general practice. 1955. 52 p.

STONES, H. H. ed.: Dental health. 83 p. illus.

Book Review

Prosthetic Dentistry—A Clinical Outline, prepared by: F. Winston Craddock, published by: Henry Kimpton, London, England. Obtainable in Canada from: McAlinsh & Co. Ltd., 125 Yonge Street, Toronto. Pages 430 with 201 illustrations. Price \$7.25.

This is a very comprehensive text on the subject. I am unable to name a single text book which deals as completely with all aspects of both full and partial denture prosthesis.

The topics discussed, cover full denture construction from mouth examination, impression taking, preparation of casts, centric occlusion, setting up of teeth, professing, principles of retention to insertion and adjustments.

Partial denture construction is well covered. It commences with the need for restoring a partial loss of teeth, then, in proper order, mouth

examination, impressions, recording centric occlusion, problems in designing etc. This section is very well illustrated with nearly fifty plates.

One chapter is devoted entirely to immediate dentures. This section is well written and the illustrations are very clear.

The section on splints, radium applicators and obturators covered the subject and gave very extensive survey of problems concerned. Although it possibly does not go into enough detail, especially on obturators, to be used as a complete guide, it would be a most useful book in any library for this chapter alone.

The book is well planned and would be an important asset to the libraries of both the general practitioner and the dental student.

G. W. Caldwell.

Correspondence

Dr. Wesley J. Dunn
Editor, Journal of the Canadian Dental Association
234 St. George Street
Toronto, Ont., Canada

Dear Sir:

I should like to make some comment concerning a statement by Paul Dionne in the J. Canad. Dent. Asso. 22:411, 1956 in which he quotes Bernard: "The OH ions have no toxic action upon the tissues and because they are lightly concentrated in the periapical area when they diffuse they simply cause a rise of pH to 8 or 9 that is towards an alkalinity, whilst the infected tissues have always a pH inferior to 7, and precisely the alkalinity about 9 is unfavorable for the evolution of microbes but favorable for the action of the leucocytes, and absolutely necessary for the process of the regeneration of the bone. What is particularly harmful in usual medicaments is that they keep a pH inferior to 7, that which hinders regeneration".

I am not acquainted with any evidence that leukocytes can withstand a pH of 9. In his book on "Biochemical Mechanisms in Inflammation". 2nd ed. p.74, 1956, Menkin cites the work of Dubin and Yen showing that macrophages can

withstand a pH of 6.8 to 8.2. *Leukocytes, however, are more sensitive to pH changes.* In a personal communication Menkin states that he is not aware of any experimental work which shows that leukocytes are not injured at a pH of 9.

So far as destruction of microorganisms at a pH of 9 is concerned, it would depend greatly upon the microorganisms in question. Without doubt some microorganisms would be destroyed at that pH, but others could survive. A sweeping statement such as the one made is therefore not justifiable.

In regard to a pH of 9 being necessary for repair of bone one must again beg the question. While alkalinity does seem to favor repair not only the degree of alkalinity must be considered, but other factors such as growth-promoting factors present in the exudate.

Finally, I should like to be certain that a pH of 9 is developed in the periapical tissue and that this pH is maintained for a period of time nearly equal to that of the repair period. Because of the buffering potentiality of the tissues this is most unlikely.

Sincerely yours,

Louis I. Grossman, D.D.S., Dr. med. dent.
(4001 Spruce St., Philadelphia 4, Pa., U.S.A.)

The Association

*Mr. Joseph T. Staddon Appointed Manager
of Professional and Industrial Pensions Limited*

On September 1st, 1956, Mr. Joseph T. Staddon became Manager of Professional and Industrial Pensions Limited, replacing Mr. E. L. R. Williamson who has acted as Administrator of the Canadian Dental Association Pension-Assurance Plan since its inception. Owing to the increased interest and participation in the Plan, it became necessary to reorganize Professional Pensions Limited in order to strengthen the Administration. The reorganization has now been completed and improvements made in office accommodation and facilities which in our opinion will enhance still further the services offered.

No change whatsoever has occurred in the Policies to be issued or the Premium Rates which as far as we have been able to ascertain, remain the most advantageous in Canada. For a few months, the Administration Office will remain in Brockville at the following address:

3 Market Square East,
Brockville, Ontario.

The Postal address is as previously:
P.O. Box 70,
Brockville, Ontario.

The intention is to establish the administration office in Toronto as soon as suitable location can be arranged. Mr. J. A. Howard will continue to be available to members in the Western Provinces for service and counselling both to individuals and local groups.

Mr. Staddon, who has now taken up his duties, came to the Plan well recommended. He has had over 21 years experience in administrative and counselling fields of insurance continuously since the age of 17, except for War Service. For several years past, he has specialized in the requirements of Professional and other self-employed men. Many of you will already have met him at Conventions and the Faculties, and we know that he is looking forward to meeting

many more of you in the future.

Mr. E. L. R. Williamson is no longer associated with the Plan. In leaving the office, Mr. Williamson expresses sincere gratitude for the ready cooperation and unfailing support given him by the Association, and in turn the Association gratefully acknowledges Mr. Williamson's development and guidance of the Plan during his early years.

C.D.A. Past-President Walsh Honoured

The Faculty of Dental Surgery of the Royal College of Surgeons of England conferred fellowship on Dr. A. L. Walsh, on July 20th last. Dr. Walsh is a former Dean of the Faculty of Dentistry, McGill University, Montreal, and also a Past President of the Canadian Dental Association. The fellowship was conferred in person. This deserving honour is in recognition of the great contribution made by Dr. Walsh to the dental profession.

Fluoridation in the United States

The U.S. Public Health Service in a report on the 10-year fluoridation programme in Grand Rapids, Mich., states that there is evidence of benefit for older age groups as well as young children. The report states, "The beneficial effects of fluoridated water are not confined to persons drinking the water since birth. The results suggest that some benefit was obtained by persons whose teeth had already formed or erupted when they started drinking fluoridated water." Since 1945 it is indicated that dental decay was reduced by about 54 per cent in the primary teeth and by about 60 per cent in the permanent teeth of children born in Grand Rapids since the programme was initiated in 1945.

Mayor Robert F. Wagner of New York City has stated that the question of fluoridating the city's water supply will be settled by the Board of Estimates and not by referendum. He reiterated his support of the public health measure.

Committees and Councils

Research

An excerpt from a recent article by Trendley Dean serves as an introduction to this report. Dean wrote:

"Research, and research alone, can provide the navigational aids to lay a true course through the stormy transitional period ahead. Research activities should be doubled and redoubled with particular emphasis upon basic research, the seed corn of research which must of necessity precede the later harvest of applied research. In this rapidly changing scientific world of the present, a continuation of a laissez faire attitude toward dental research might well produce an irremediable situation in the future."

The most important single function of the Research Committee is to administer the studentship programme of the Canadian Dental Association. These studentships offer financial assistance to promising candidates who wish to prepare themselves for a career in teaching and research. Since the inauguration of the programme in 1947, nineteen dentists have received training in such diverse fields as anatomy, bacteriology, biochemistry, endocrinology, nutrition and histology. During the past year the committee approved studentships for training in the fields of nutrition, histochemistry and anthropology. The studentships are intended to foster research in dentistry by assisting suitable candidates to receive training in teaching and research. They are not intended to assist candidates in obtaining a specialist certification in clinical fields.

The research committee has published the following reports during the year 1955-56:

1. An evaluation of dentifrices in the prevention of dental caries and gingivitis, *Jour. Canad. Dent. Assoc.* 21:557, 1955 and 21:609, 1955.

2. Statement re: Fluorides and Periodontal Disease, *Jour. Canad. Dent. Assoc.* 21:302, 1955.
3. Effects of Chewing Gum on Dental Caries and Oral Hygiene, *Jour. Canad. Dent. Assoc.* 22:488, 1956.
4. The brochure, "Facts on Fluoridation", has been revised to include additional data made available from recent studies.

The committee recently completed a survey of the present status of dental research in Canada. The survey revealed what we know in a more general way — that research does not constitute an important activity in most of the dental schools in Canada. The committee reiterates the suggestion forwarded last year to the Council on Dental Education: "From time to time every school has changes in its staff — where a new appointment is to be made, no effort should be spared to 'recruit from the intellectually adventurous' and to urge the prospective appointee to take advantage of the C.D.A. studentship programme in order to prepare for a career of teaching and research. If each school were to take advantage of this programme and send at least one suitable candidate, an important nucleus for research in the institution would be assured." The committee considers that "to limit teaching strictly within a circumscribed area of things known would be to rob teaching of its vivifying force" and that to further knowledge by experimental investigation is an obligation of any institution which considers itself an integral part of the university discipline.

Gordon Nikiforuk,
Chairman.

Economic Security

Your Home

by E. I. R. WILLIAMSON, M.B.E., B.P.A., F.R.Econ.S., Consulting Economist.

PART 2

THE ECONOMIC ASPECT OF THE HOME.

We live not by bread alone, but nonetheless we have need of bread. A house does not make a home, but decent habitation where it is possible for a family to live in self-respect and good order is fundamental to the existence of a home and, indeed, to the preservation of the family itself as a viable entity.

The three indispensable physical accoutrements of life are food, clothing, and shelter. Of these, shelter has the particular economic aspects that:

1. It is the largest single item of expenditure.
2. It is the most inflexible of all the family's requirements as to both quantity and quality.
3. Failure to maintain shelter in a period of adversity can undermine all other provisions for economic security.

With regard to these three characteristics, it may be pointed out, first, that rent consumes 35 per cent of the average family budget; or that if owned, the purchase of the family home will be the largest and longest term expenditure which the average family will ever make. Second, that quick adaptation of the family's shelter to changing circumstances is extremely difficult, and in the case of downward revision actually is the last change embarked upon. A champagne and caviar diet can be changed overnight to hamburger and potatoes with beneficial results; but not an eight-room split-level with two baths for two rooms with bath down the hall. Third, that unless advance provision has been made, mere maintenance of shelter in event of the disability or decease of the bread-winner may impose such a drain on the family's resources as to bring the family below

a tolerable standard of living, with far-reaching consequences both tangible and intangible.

Considering these economic characteristics of shelter in terms of the four great types of economic need to which professional men are exposed (see "Economic Needs of Professional Men", August, 1954, issue of the "Journal"), what do we find? In the event of loss of present income through sickness or accident, the problem of meeting the high cost of rent for the standard of living accommodation maintained by the average practitioner will be a serious one. Yet every member of the family would be reluctant to give to the world the most obvious sign of financial stringency — retreat to less desirable shelter. Contractual obligations may even make it impossible to do so at an early date, and when possible it may be very difficult to find adequate space in terms of physical volume alone, at a price which is within reach in the circumstances. If the disability be prolonged, the economic strain of meeting rent may even necessitate the separation of the family.

In event of the loss of all future income through the decease of the bread-winner — the second great cause of economic need — the problem of rent assumes very large proportions indeed. The period of time required for the family to reach maturity, plus the period of the normal life expectancy of the widow after the children are grown means that the cost of shelter must be met by the estate for a period of possibly thirty to forty years, with any reliable estimate of cost over the latter part of the period quite difficult. If such rental costs are to be met out of insurance proceeds, the amount provided must be nearly double that required if rent need not be taken into

consideration. If rent is to be met out of other assets, these also must be substantially increased.

In the third area of economic need — a financial resource in emergency — it is self-evident that rented shelter is not a resource, but a liability. Whilst it is equally obvious that the family's shelter is the last thing which should be thrown into the breach of financial need, special circumstances may justify or make imperative such a move. An owned home usually can be employed for this purpose given reasonable time and not too adverse general conditions.

Finally, to meet needs in retirement, the case for security of shelter is overwhelming. The average practitioner facing retirement must provide shelter as the paramount need of himself and wife for a period of sixteen years. During this period, his income will be fixed, and he

will have no reasonable prospect of supplementing it. Shelter, if rented, will tend to increase in cost, and the longer he outlives his normal life expectancy, the greater the problem.

This brief summary of the primary role played by security of shelter in any programme for economic security for professional men, will suggest why every comprehensive social insurance on a national basis has found provision of shelter the problem on which all else has hinged. Without security of shelter the whole system collapses; with security of shelter, economic security becomes realistic, attainable — a functioning defence for the whole family.

The only secure shelter is the physical home which is owned, shelter of which the family *cannot* be deprived by the unilateral action of others. Some further aspects of home ownership will be discussed in the next article.

The Corps

Capt. J. L. Craig of the R.C.D.C. School presented a paper at the Eastern Ontario Dental Convention in Ottawa on September 23rd. His subject was "An Abstract on Oral Health".

Major G. C. Evans, Ottawa, is attending a 16-week course in advanced dentistry at the Army Medical Services Graduate School, Walter Reed Army Medical Centre, Washington, D.C.

Major L. G. Craigie, Ottawa, is attending a three-month course in Crown and Bridge and associated subjects at the United States Naval Dental School, Bethesda, Maryland.

Brigadier E. M. Wansbrough attended the A.D.A. Convention in Atlantic City, October 1st to 5th, 1956.

Army Headquarters recently announced the promotion of Lt.-Col. H. L. Harris to the rank of Colonel and of Majors L. C. Cameron and G. R. Covey to the rank of Lieutenant-Colonel.

Colonel Harris was born at Kentville, N.S., in June 1908. He received his early education in Nova Scotia and graduated from McGill University in 1934. He was ap-

pointed to the R.C.D.C. in November 1939, proceeding overseas in 1942. Since the war, in addition to a tour of service at Army Headquarters, he has commanded both 13 Coy. and 12 Coy. Colonel Harris is married and has two children. He will continue to command No. 12 Coy. with Headquarters at Halifax, N.S.

Lt.-Col. L. C. Cameron was born at Lawrencetown, N.S., in June 1904. He graduated from Dalhousie University in 1932 and was commissioned in the R.C.D.C. in 1940. Lt.-Col. Cameron served in Canada, the United Kingdom, Italy and Northwest Europe. Taking his retirement in 1946 he re-enrolled in 1947 and has since served in Western Canada and in the Maritimes. Lt.-Col. Cameron is married and has three children.

Lt.-Col. Covey was born at Toronto, Ontario, in March 1919. On graduation from the University of Toronto in 1941 he was appointed to the R.C.D.C. He commanded No. 25 Cdn. Field Dental Unit in Korea from July 1952 to April 1953 and was awarded the M.B.E. for his services in that theatre. Lt.-Col. Covey has more recently been em-



SENIOR R.C.D.C. MILITIA OFFICERS WHO ATTENDED A RECENT COURSE
AT THE R.C.D.C. SCHOOL, OTTAWA.

Sitting (L to R)—Major R. W. Hughes, Goderich, Ont., Major A. J. Harris, London, Ont., Major C. B. Crutchfield, Quebec City, Major D. B. McAdam, Toronto, Ont., Major T. F. Gelly, Winnipeg, Man.

Standing (L to R)—Major G. G. Orser, Woodstock, N.B., Major B. J. Eastwood, Edmonton, Alta., Major K. I. Carroll, Port Colborne, Ont., Major C. W. Olsen, Edmonton, Alta., Major A. J. Gervais, Montreal.

played at the R.C.D.C. School and now is to be senior operator in No. 15 Coy. for employment at R.C.A.F. Station, St. Jean, Quebec. He is married and has one child.

Lt.-Col. C. W. McCrary, formerly senior operator in No. 15 Coy. R.C.D.C., has recently been appointed to command the Unit. Lt.-Col. McCrary graduated from the University of Toronto in 1926, entering practice in London, Ont. He was commissioned in the R.C.D.C. in 1940 and saw service in Canada, the United Kingdom and Northwest Europe. He was promoted to his present rank in July 1953.

Captains D. J. Carmichael, T. D. Joslin and C. J. Sivell were promoted to the rank of Major recently.

Major Carmichael was born at Vancouver in 1921. He served as a Flying Officer in the R.C.A.F. during the war and graduated from the University of Oregon in 1950. Major Carmichael was commissioned in R.C.D.C. in 1951 and is at present serving

in Europe. He is married with one child.

Major Joslin is a native of Simcoe, Ontario, being born there in 1920. During the Second World War he was commissioned in the Royal Canadian Artillery and saw service in the United Kingdom and Northwest Europe. He was appointed to the R.C.D.C. while an undergraduate at the University of Toronto in 1950. Major Joslin served a tour of duty in Korea and is at present located at R.C.A.F. Station, Centralia. He is married and has two children.

Major Sivell was born in Toronto in 1922. He received his early education there and served in North Africa and the Middle East as a Flight Lieutenant in the R.C.A.F. during the Second World War. He was appointed to the R.C.D.C. as a subsidized officer in 1950 and graduated from the University of Toronto in 1951. Major Sivell served a tour of duty in Korea and is now stationed at Camp Borden, Ont. He is married with three children.

The Provinces

Alberta

The summer golf meets of the **Edmonton and District Dental Society** ended with the Provincial Dental Golf Tournament held in Red Deer, September 15th. The winning team, made up of Dr. Tom Demco, Dr. Phil. Kendal, Dr. Maurice Wright and Dr. Dave Buchanan, came from Edmonton and District. They won the provincial trophy and Tom Demco won the trophy for low gross score.

The first business meeting of the fall and winter season was held October 2nd in the Seven Seas with Dr. Arnold Lane presiding. The society lost two members by death, since the last business meeting, and tribute was paid to the memory of Dr. W. E. Weber and Dr. H. F. Whittaker. A minute's silence was observed for each.

A highlight of the meeting was a presentation by the Alberta Dental Association of a leather brief case to Dr. K. A. Burnham, in recognition of his services as chairman of Alberta Dental Health Week for the past two years. Dr. Phil Kendal, in presenting the brief case, noted that Alberta pioneered Dental Health Week and that neighboring provinces were adopting it.

Colonel Gordon Shillington of the R.C.-D.C. addressed the meeting on "Treatment Planning for Partial Dentures." His theme: "The success of a partial denture must be assured before the impression is taken." This requires a thorough examination of the patient, good design and a treatment plan.

Colonel Shillington illustrated his lecture with slides, study casts, and a demonstration of the use of a surveyor.

Dr. Lane reminded the meeting of a Ladies' Night coming up on October 12th. There will be dancing and entertainment in the beautiful new Mayfair Golf Club.

G. C.

On September 10 and 11, 1956, the bi-annual Fall Refresher Course of the Faculty of Dentistry, University of Alberta, was held in the Medical Building.

The following guest speakers were in attendance to present papers:

1) Stanley D. Tylman, M.S., D.D.S., F.A.C.D., professor and head of the Crown and Bridge Department of the University of Illinois, College of Dentistry. As guest

clinician he was well received by the large attendance of dentists.

2) J. B. Macdonald, D.D.S., Ph.D., Associate Professor of Bacteriology and Chairman of the Division of Dental Research, Faculty of Dentistry, University of Toronto, whose subjects were: a) Recent Findings in the Bacteriology of Periodontal Disease; b) Virus Infection of the Oral Cavity; c) Dental Education, A New Challenge.

3) H. R. MacLean, D.D.S., F.A.C.D., F.I.C.D., Professor of Operative Dentistry, Faculty of Dentistry, University of Alberta. The subject of his address was "Radiation Hazards in Dentistry". Dr. MacLean is well-known for his studies in Roentgenology with reference to the field of Dentistry.

A number of the members of the Faculty of Dentistry, University of Alberta, gave table clinics during the refresher course. Those participating were: Drs. Blackmore, Brass, Duke, Fraser, Little and Stewart.

Drs. MacGregor and McMurphy spent many hours organizing the course and deserve thanks, along with the speakers and clinicians, for their efforts.

G. H. D.

On September 4, 1956, the 1956-57 session of the **Faculty of Dentistry, University of Alberta**, opened with 30 students in first year and a total registration of 118.

A new member to the faculty this session is C. R. Castaldi, D.D.S., M.S.D. Dr. Castaldi is in charge of the Paedodontic Department, coming to us from the University of Indiana. He received his D.D.S. from the University of Toronto in 1944. Later he took graduate training at Northwestern University where he received his M.S.D. in 1951.

From 1943 to 1946, Dr. Castaldi served in the R.C.D.C., attaining the rank of captain. He is married and has two children.

Quebec

Dr. F. Cyril James, principal and vice-chancellor of McGill University, recently announced the promotion of **Dr. Mervyn A. Rogers** to the rank of associate-professor of clinical dentistry.

Dr. Rogers was born in Bulmer, Quebec. He attended Bishop's University before enrolling in the faculty of dentistry of McGill

University where, as gold medallist, he received his degree in 1940.

He served as a captain with the Royal Canadian Dental Corps until the end of the Second World War. Since his discharge from the Armed Forces, Dr. Rogers has practised in Montreal and has taken an active part in dental affairs. He has twice been a member of the executive of the Montreal Dental Club.

Dr. Rogers joined the staff of the Faculty of Dentistry at McGill in 1945. He will succeed Professor W. G. Leahy as associate director of the clinical teaching facilities at the McGill faculty of dentistry at the Montreal General Hospital.

Saskatchewan

The **Saskatchewan Dental Association** took a bold step forward recently with the holding of its first Convention since 1938. In a province where separation by great distances has always been a problem, the revitalized S.D.A. (re-formed in 1951) has been responsible for the integration of the profession through the media of the telephone lecture series, circulation of films, and the bi-annual presentation of distinguished clinicians at various points throughout the province. More recently the Association was closely related to and actually sponsored, the institution of the Dental Post Payment Plan in Saskatchewan.

It followed naturally that the executive of the S.D.A. should think in terms of a convention, and the soundness of the idea was fully corroborated by the success of the gathering at Waskesiu Lake in Prince Albert National Park, August 30-September 1st, last. A record turnout heard an inspiring address from the President of the Canadian Dental Association, Dr. K. M. Johnson. His attendance was greatly appreciated and it indicates the vigor with which he is assuming his duties. Over 100 sat down to the President's banquet chaired by Dr. N. T. Godfrey, and listened to a stirring address by John Diefenbaker, M.P., on current foreign affairs and the Suez situation in particular.

Clinician lecturers Dr. Joseph Freeman of Winnipeg and Dr. George Brass of Edmonton, provided educational features of high calibre. Dr. Freeman lectured on Aspects of Oral Surgery and Dr. Brass dealt with Techniques for Amalgam and Gold Restorations.



Dr. W. W. Woodbury, Dr. A. W. Faulkner and Dr. J. S. Bagnall (left to right) were recently made Honorary members of the Halifax County Dental Society.

Business meetings rounded out the agenda, reports being heard from the committees of the S.D.A. and an afternoon was devoted to the Post Payment Plan. A representative province wide group discussed the various aspects of Health Insurance, Dental Public Health, Public Relations and the general status of the profession. A spirited meeting, presided over by Dr. Locke of Saskatoon, heard a report on the Post Payment Plan. It was felt that although participation in the plan would be necessarily slow, it was basically sound, filled a definite need, and deserved the wholehearted support of the profession.

Social events for the ladies proved very popular, as did their participation in the main luncheons and dinners. Waskesiu provided all with diversified recreation — golfing and fishing being enjoyed by the majority. Tentative arrangements were made for the Annual Meeting of the Association to be held in Saskatoon in April of 1957.

L. D. H.

Ontario

Dr. Stuart E. Calverly of Timmins was elected president of the **Northern Ontario Dental Association** at the annual meeting held in Sault Ste. Marie recently, while another Timmins dentist, Dr. Joseph Martin, was chosen secretary-treasurer of the body. Dr. William Bergman of Kirkland Lake was elected first vice-president.

The following have been elected to the executive of the **Peterborough and District Dental Society**:

Dr. R. H. Campbell — Honorary President. Dr. Allan F. McDougall — President. Dr. Cameron Craig — Vice President. Dr. H. M. Yule — Secretary Treasurer.



The Charles McKenna Memorial Trophy.

A new trophy was presented for competition at the Annual **London Dental Society** Golf Tournament, held at Highland Golf Club, London, under a cloudless sky and with near perfect golfing weather. Over seventy-five golfers teed off in quest of the three existing trophies and the newly presented Charles McKenna Memorial Trophy, donated to the Society Tournament by the S. S. White Company in memory of the late Charles McKenna.

"Charlie" McKenna was one of the truest friends and staunchest supporters of the London Dental Society Golf Tournament since its inception some twenty-five years ago. He never missed attending and never missed playing at least nine holes of golf in company with the late Dr. S. N. Kennedy, another great friend of dentistry and this tournament, who was sadly missed from the meet this year. Charlie had presented the S. S. White Trophy each year to the Low Net winner and his presentation speech, jokes included, was always a highlight of the dinner. Now the name of Charlie McKenna will continue to be remembered and loved through the Trophy which was presented to the London Dental Society by Mr. Maurice Wickett of the S. S. White Co.

The Trophy, to be given annually to the Low Gross winner among the members of the London Society, was presented to Dr.

W. R. Morris of London by Dr. R. S. Woolatt of Toronto, a long-time friend of Charlie McKenna and of this tournament, who paid tribute to Charlie as a gentleman, as a representative of the Dental Supply Organizations, and as a true friend of dentistry and dentists everywhere.

Since the 1955 Tournament, dentistry and the London Society suffered a great loss in the person of Dr. S. M. Kennedy, whose S. M. Kennedy Trophy is presented annually to the Low Gross winner, First Nine Holes. This year the Trophy was presented by his son, Dr. Fred Kennedy of London, to Dr. Hugh Griffith of Sarnia.

The S. A. Moore Trophy, for the Low Gross winner, was presented by good friend Dr. Al Moore of London, to Dr. A. C. Humphries of London, while the S. S. White Trophy, for Low Net winner, was presented by Mr. Maurice Wickett to Dr. A. V. Scrutton of London. Runners-up honors for Low Gross and Low Net went to Dr. G. T. Milne of Sarnia and Dr. J. A. Belecky of London.

The dinner meeting and prize presentations were presided over by incoming Society President Dr. A. J. Harris of London who welcomed the 125 dinner guests and introduced the new member of the London Society Executive, Dr. D. C. Way of London.

J. A. G.

Mr. Donald B. Williams, Brantford Water Works Chemist, has been honored by election as a professional member of the Chemical Institute of Canada.

Mr. Williams, on the request of the Editor, provided an article which appeared in the December 1955 issue of the *Journal of The Canadian Dental Association*, entitled "The Fluoridation of Drinking Water". This has been one of the most sought-after articles this *Journal* has ever published.

Mr. Williams is recognized as a world authority on the mechanical aspects of fluoridation. This coupled with a wide experience in the water works field, embracing 26 years of service, have culminated in this very considerable honor for Mr. Williams, who is not a graduate of a university.

Mr. Williams began literally at the bottom, in the plant of G. F. Sterne and Sons Ltd., and through his own efforts became highly competent in his field and ten years ago he went to the Public Utilities Commission in Brantford.

To Mr. Donald B. Williams, M.C.I.C., the Canadian Dental Profession offers sincere congratulations.

Dr. George A. Morgan of Toronto has been re-elected a Councillor-at-large of the American Academy of Roentgenology.

This year's **Ontario Public Health Convention**, September 24-26th, had more than the usual number of dental subjects on the program. The entire program of the meeting was under the direction of Dr. Glenn T. Mitton, Field Secretary of the Public Health Committee of the Ontario Dental Association. This year Dr. Mitton was elected First Vice-President of the Association — the first time that a dentist has held this high office.

An especially comprehensive and valuable presentation on Cleft Palate Rehabilitation was given at a joint session of medical, dental and nursing personnel. Dr. M. A. Cox was the moderator of a panel that consisted of:

Dr. Norma F. Walker — Genetics. Dr. R. Johnston — Medical Reporting. Dr. W. A. Lindsay — Plastic Surgery. Dr. J. E. Whaley — Nose and Throat. Dr. W. J. Spence — Orthodontic Correction. Miss R. Lewis — Speech Therapy.

These specialists are co-operating very closely on the rehabilitation of cleft-palate cases at the Hospital for Sick Children, Toronto.

The Dental Section heard the following papers:

Dr. W. H. Feasby read a report for Dr. F. Popovitch, the director of the Burlington Orthodontic Research Centre.

Dr. G. T. Mitton read a report for Dr. M. G. Boyes on the Dental Public Health Program Co-ordination with Voluntary Professional Agencies.

Dr. F. A. Kohli, Director of Dental Services, Department of Health of Ontario, discussed a brief from the Dental Officers' subsection of the Dental Section, on Long Range Plans in Dental Health Programs.

This brief is to go forward to the Ontario Health Department. Two Resolutions were presented from the Dental Section to the Annual Meeting of the Ontario Public Health Association where they were passed. One motion re-affirmed the approval of fluoridation and requested the Minister of Health to amend the Ontario Public Health Act to, "specifically empower local authorities to adjust the fluoride content of communal water supplies to an optimal level." The other submission recommended, in principle, the extension of public health services by using dental hygienist teams under the direction of public health trained dentists.

Dr. Jack Kreutzer of Toronto was recently elected to Fellowship in the American College of Dentists. The Fellowship was conferred at the Convocation held in Atlantic City on Sunday, September 30th, 1956.



*Dr. Wesley P. Munsie, President,
Vancouver & District Dental Society*

Photo—KRASS

British Columbia

The season's opening meeting of the **Vancouver and District Dental Society** took place in the Banquet Room of the Hotel Vancouver on October 2.

An afternoon session was held, attended by over 100, at which an outstanding prosthodontist from the University of Southern California, Dr. Earl Pound, spoke on the subject "Functional Esthetics and Phonetic Dentures". Dr. Pound is a native son of B.C. and received his early education in Vancouver.

In the evening a cocktail party preceded the dinner meeting, when Dr. Wesley P. Munsie, the new President, wielded the gavel and first introduced the head table guests, including the newly appointed executive secretary, Dr. W. Ross Upton, who spoke briefly.

Dr. Pound's evening lecture on "Esthetics As I See It" was full of useful information and was heard attentively by the large gathering. Dr. Clay Hallman introduced the speaker and Dr. L. W. Beamish expressed the Society's thanks at the evening's close.

The **College of Dental Surgeons of B.C.** collaborated with the B.C. Dental Association and the Vancouver and District Dental Society to investigate various methods of expanding the facilities of the Combined Office, and after over six months of thought

and study, a piece of property in the West End of Vancouver (corner of Robson and Cardero Streets) has been acquired. A projected building on this property will eventually house offices and study clubs of the three organizations.

Another joint effort of the three major B.C. bodies has been the securing of an Executive Secretary in the person of Dr. W. Ross Upton, formerly of Calgary. Dr. Upton came with the highest recommendations and assumed his new duties at the end of August.

The **Victoria and District Dental Society** met for the first time this season at the Empress Hotel on September 17 with 41 members in attendance. Dr. Bruce Smith of Seattle spoke on "Modern Cavity Preparation", covering a wider field than the title suggests. His talk was based on material originally prepared for a paper he gave in Amsterdam to the American Dental Society of Europe and was very well received. The speaker was introduced by the President, Dr. C. B. Jameson, and thanked by Dr. T. W. James.

The last meeting of the **Prince George and District Dental Society** took the form of a visit to the Prince George Pumping

Station. The City Engineer demonstrated chlorination and fluoridation equipment, as well as the pumping and testing equipment, all of which was most enlightening.

The **Fraser Valley Dental Society** held its first dinner meeting after the summer recess on September 20 at the Delair Cafe in Abbotsford. Following the business meeting, Dr. Doug Yeo, the Vancouver Metropolitan Dental Health Director, presented an interesting film on the stainless steel crown restoration of badly decayed deciduous teeth.

The city of **Kelowna**, with an estimated population of 8500, began fluoridating its water supply on September 15. There were a few testing periods before that date, but now the fluoridation is in complete operation.

On Sunday, September 30th, 1956, at the Convocation of the American College of Dentists, Fellowship was conferred upon **Dr. J. Cal Foote** of Victoria.

D. H. M.

General News

In a statement issued August 30 the Department of Defence (U.S.) announced its endorsement of **fluoridation at military installations** where children are in residence. In developing the projects, the Defence Department stated that the advice of appropriate health personnel would be sought. Fluoridation is already in effect at a number of Army, Navy and Air Force bases.

Dr. Harry Lyons, of Richmond, Va., dean of the School of Dentistry, Medical College of Virginia, is the new president of the **American Dental Association**. He was installed at the close of the Association's 97th Annual session in Atlantic City on Oct. 4, succeeding Dr. Bernard C. Kingsbury, of San Francisco. Dr. W. R. Alstadt, of Little Rock, Ark., former 12th district trustee, was unanimously chosen as president-elect.

Dr. Alstadt will become president at the close of the 98th annual session in Miami, Nov. 4-7, 1957. Dr. Gerald D. Timmons, of Philadelphia, dean, Temple University School of Dentistry, was unanimously re-elected Speaker of the House of Delegates. Attendance at the Atlantic City meeting was 14,235, a figure exceeded only by the record registration of 14,741 at San Francisco in 1955.

Dr. Eugene R. Westcott, of Atlantic City, who served as chairman of the General Committee on Local Arrangements, was unanimously chosen as first vice-president. Other officers, also elected without opposition, are: Dr. Harold E. Cafferata, of Reno, Nev., second vice-president, and Dr. John W. Knutson, of Washington, D.C., dental director of the U.S. Public Health Service, third vice-president.

In Memoriam

John Alexander Bothwell — Dr. John Alexander Bothwell, 73, who practised in Toronto for 50 years, died Sunday, October 7, 1956 at the Private Patients' Pavilion of the Toronto General Hospital.

Dr. Bothwell was a director of the Medical Arts Building, having been one of its tenants from the time it opened.

After long years of service on many dental councils and boards, he was elected a Fellow of the International College of Dentists.

Born in Woodstock, and with early education at Hickson Public School and Stratford High School, he matriculated from Trinity College, Toronto, in 1902, and entered the Royal College of Dental Surgeons of Ontario.

After graduation in 1906 he demonstrated in operative dentistry.

He became secretary of the Public Health Committee of the Toronto Dental Society, also of the Ontario Dental Association. In 1908 he was appointed to the staff of the Hospital for Sick Children and organized the clinic to care for ward patients.

In the five years following his appointment as chief dental officer for the Department of Health for Toronto, he organized the public dental clinics under the Department of Health.

From 1919 until 1928 he was associate professor in prosthetic dentistry at the Royal College of Dental Surgeons and Faculty of Dentistry.

He became president of the Academy of Dentistry in 1923, and president of the Ontario Dental Association in 1926. He was chairman of its Benevolent Committee.

During the Second World War years he was instructor of prosthetic dentistry for the Royal Canadian Army Dental Corps at the Technical Training Centre.

In 1951 Dr. Bothwell was made an honorary life member of the Ontario Dental Association, in 1954 a life member of the Dental Alumni Association and in 1955 an honorary life member of the Royal College of Dental Surgeons and the Academy of Dentistry, Toronto.

He was a member of long standing of Bloor Street United Church and was ordained an elder in 1926.

He was a member of the Masonic Univer-

sity Lodge and of the Scottish Rite, 32nd degree.

His wife, the former Mary Helen Thompson, predeceased him about 10 years ago. He leaves two daughters, Mrs. H. Stevenson of Toronto and Mrs. J. S. Wheeler of Cooksville; two sisters, Mrs. Ethel Hohnes of Inwood and Miss Mary Bothwell, a singer, of New York. There are six grandchildren.

•

C. P. Moore — Dr. C. P. Moore, 81, pioneer Weyburn dentist, died in hospital at Durham, Ontario. He had been ill for about five months.

A native of Owen Sound, Dr. Moore studied at Toronto and Philadelphia before opening a private practice in Weyburn about 1903. In the early days Dr. Moore travelled the Soo line and went as far as Frobisher in practising dentistry. He was well known throughout southern Saskatchewan. He retired in 1947 and moved to Hamilton in 1950 and had resided in Ontario since.

Dr. Moore served on the Weyburn Council in the early days and had also served the city as mayor. He was a prominent mason and shriner.

He is survived by a brother Frank at Weyburn, and five sisters, Mrs. Jane Joyce and Mrs. Emily Wilkinson, both of Owen Sound, Mrs. Harriette Rive, Durham; Mrs. Shobel De Savigny, Regina, and Miss Gertrude Moore, Durham.

•

Joseph Rice — Dr. Joseph Rice, well known Winnipeg dentist, died suddenly at his home following a sudden illness. He was 50.

Dr. Rice was born in Montreal and went to Winnipeg as a child with his parents. He graduated from the University of Manitoba and later the Faculty of Dentistry in Toronto. Since that time he practised in Winnipeg.

Dr. Rice was a member of the Winnipeg Dental Society, was active on the board of the Family Bureau and took an active interest in musical circles in the city.

He is survived by his widow, Merle; a son, Nicholas; two brothers, Walter H., Winnipeg, Charles, Vancouver, and a sister, Mrs. M. S. Evers, New Westminster.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1957	Winnipeg, Manitoba	June 23—26th
1958	Montreal, Quebec	Oct. 5—26th
1959	Halifax, Nova Scotia	_____
1960	Ottawa, Ontario	_____

FUTURE EVENTS

Date	Function	Location	Officer	Address
Nov. 23	Faculty Day Dental Alumni Assoc.	Toronto, Ont.	Dr. R. Moore	2 Grenview Blvd. Toronto, Ont.
Dec. 2	A.A.D.M. Mid Annual Meeting	New York, N.Y.	Dr. A. Reiner	114-01-201st Street, St. Albans 12, N.Y.
Dec. 3-7	Greater New York Dental Meeting	New York, N.Y.	Dr. R. E. Morse	Room 106A, Hotel Statler, New York, N.Y.
Feb. 21, 1957	Dental Workshop Conference	Royal York, Hotel, Toronto Ontario.	Dr. F. H. Compton	City Hall, Toronto, Ont.
Sept. 7-14	Congrès de la Fédération Dentaire Internationale	Rome, Italy	G. H. Leatherman	Secretary, London, England.

SHORT GRADUATE COURSES

Faculty of Dentistry, University of Toronto

ENDODONTICS

December 3-7, 1956

Enrolment Limit 8

The course will include diseases of the pulp, diagnosis of pulp disease, pulp protection, pulpotomy, pulpectomy, therapy as applied to the pulpless tooth, obliteration of root canals in anterior and posterior teeth, root resection, bleaching discolored teeth, and consideration of systemic diseases in relation to focal infection.

The course will be under the general direction of Dr. G. C. Hare.

Tuition Fee \$100.00

ORTHODONTICS

March 11-15, 1957

(For the General Practitioner)

Enrolment Limit 12

This course is designed for the general practitioner. It comprises a review of anatomical structure, the development of head and jaws, normal occlusion and, in addition, the aetiology of malocclusion, tissue reaction during orthodontic therapy and modern therapeutic methods for the interception of malocclusion. Laboratory and clinical periods will be scheduled to include patient examination, appliance construction and manipulation. Sessions will be scheduled during which registrants may present practical cases for consultation and discussion.

The course will be under the general direction of Dr. D. G. Woodside.

Tuition Fee \$100.00

DENTAL ORAL SURGERY AND ANAESTHESIA

April 29-May 3, 1957

Enrolment Limit 12

The course will consist of a brief review of the fundamentals of surgery, including anatomy, pathology, radiography, differential diagnosis, and pre-operative and post-operative considerations. The systemic factors which might limit or contraindicate the extraction of teeth will be discussed, together with the latest developments in chemotherapy. Instruction will be given in local and general anaesthesia, the pathological relationship of the teeth to the maxillary sinus, fractures of the jaws, cysts, root resections, abnormal frena, malposed and impacted teeth, cellulitis and deep neck infections, flap operations and the removal of difficult teeth and roots. An effort will be made to deal specifically with the problems which confront the general practitioner in his office.

The course will be under the general direction of Dr. J. H. Johnson.

Tuition Fee \$100.00

RADIODONTICS

November 5-9, 1956

Enrolment Limit 10

This course will be devoted to a study of Dental Radiographic Technique and Interpretation. The intraoral and extraoral techniques which are in common usage will be demonstrated and participants will engage in a "work-shop" and will make radiographs by simple techniques using patients provided for the purpose. Radiographic Interpretation will be dealt with in a comprehensive manner commencing with the basic principles, and later the normal and abnormal appearances will be considered. Where possible there will be correlation of the radiographic appearances with the underlying pathological conditions. Seminars will be conducted for the purpose of discussing some problems.

The course will be under the general direction of Dr. Maxwell N. Rockman, and the guest lecturer will be Dr. H. M. Worth, Radiologist, special lecturer in Radiodontics to the Faculty of Dentistry, University of Toronto.

Tuition Fee \$100.00

New York University College of Dentistry—Periodontia and Oral Medicine Refresher Course.

Date: February 20-May 1, 1957, Wednesdays

Time: 4 P.M. to 6 P.M.

Fee. \$211.50 including tuition, books, instruments.

This course will be given by Professor Samuel Charles Miller and Associates. For further information write: Secretary, Postgraduate Division, New York University College of Dentistry, 209 East 23rd St., New York 10, N.Y.

Journal

DE L'ASSOCIATION DENTAIRE CANADIENNE

L'importance de la denture temporaire en vue de la dentition permanente

par FRANCOIS SIMARD, B.A., D.D.S., Montréal

C'est un fait évident et hors de conteste que les avantages d'une denture régulière sont d'une importance telle que les chirurgiens de tous les temps en général et les dentistes en particulier se sont préoccupés de trouver des moyens sûrs et exceptionnels pour prévenir la carie dentaire, les malocclusions et toutes les déviations des dents pendant la dentition temporaire.

Pourquoi un tel état de chose s'est-il toujours manifesté? Pourquoi ce problème intéresse-t-il tant de personnes? C'est que la carie des dents temporaires, leurs vices de conformation, leur occlusion anormale, non seulement peuvent gêner la mastication, l'émission de la parole et l'expression du langage chez l'enfant et l'adulte, mais encore ils exercent une influence fort désavantageuse sur la santé, le développement osseux des maxillaires, la trituration des aliments et consécutivement sur la digestion et la nutrition de l'individu. Le docteur Roger

H. Dennett, professeur des maladies des enfants à l'Université Columbia affirme: "Les enfants d'aujourd'hui ont besoin qu'on attache une attention accrue à leur éducation dentaire. L'état de santé actuelle de nos enfants au point de vue dentaire nous révèle une situation lamentable due à de nombreux facteurs. Ces facteurs, on les connaît, on les côtoie, mais, trop souvent, hélas, on les oublie."¹

Dans le passé, disons avant la deuxième Grande Guerre, des sommes volumineuses ont été consacrées à la recherche d'un matériel et d'un équipement plus nouveau et meilleur pour les traitements de restaurations, mais je crois sincèrement qu'on n'a pas attaché assez d'importance à la recherche de remèdes préventifs, à ce problème d'une mauvaise dentition temporaire.

L'évolution de l'éducation dentaire a certainement eu une grande influence sur ces soins plus ou moins adéquats donnés aux enfants depuis de nombreuses années.

L'ère primitive de la dentisterie en fut une d'instruction personnelle ou tous les intérêts furent centrés sur les restaurations prothétiques et l'ablation de la douleur. Puis succéda l'époque secondaire, accaparée par un vent d'indépendance avec conclusion que l'éducation dentaire se porta surtout sur les écoles médicales. Ceci amena la fondation de la première école dentaire à Baltimore en 1840. Au cours de cette époque, on s'efforça de donner surtout aux étudiants des techniques bien caractéristiques à la profession dentaire.

L'ère tertiaire vint alors et ce fut l'invention de l'engin dentaire, mais cette pratique devint plutôt lucrative. Encore là, le côté mécanique prévalut, et plus une école dentaire était à la page au point de vue technique, plus elle avait d'étudiants. On n'attachait aucune importance aux sciences de base. Dans ce moment critique arriva Sir William Hunter, qui par des attaques rigoureuses força les écoles privées à devenir des facultés d'université et, en définitive, l'enseignement des sciences de base devint une réalité. Cependant, tout n'était pas fait, loin de là! En 1934, le Comité de Surveillance de l'Association dentaire américaine faisait rapport de ses enquêtes et déclarait que même si on enseignait les matières de base dans les premières années, on n'accordait que peu d'attention à la pratique avec le résultat que l'étudiant graduait avec un sentiment d'intérêt lorsqu'il était en face d'un cas de prothèse, de couronne ou d'une incrustation, mais d'une insouciance lamentable, quand il affrontait un examen ou une consultation. Cette façon d'agir du dentiste, sa méthode capricieuse de traiter à la légère un diagnostic et aussi de ne demander aucun honoraire, influença beaucoup l'attitude du patient. Quand un enfant avait besoin d'un examen et les parents d'instructions pour protéger la santé dentaire de leurs enfants, le dentiste à cause de son éducation pensait qu'un tel programme, économiquement parlant, n'était pas du tout intéressant pour lui; c'était une perte de temps, disait-il. Le résultat

de tout ceci fut la négligence de la dentition temporaire.

En 1941, on appela les jeunes américains sous les drapeaux et, à ce moment, on comprit la gravité du problème et sa fondamentale importance. Semblable à un volcan qui entre soudainement en éruption, on mit tout en branle. Les gouvernements réagirent, des cliniques spécialement et uniquement pour les enfants devinrent des réalités, une spécialité dentaire pour les enfants fut reconnue, des bourses d'études furent octroyées, etc. On constata, d'après les rapports publiés postérieurement, que sur dix soldats embauchés par l'armée, neuf souffraient de la carie dentaire, la moitié avaient des malocclusions et des défauts de formation des maxillaires, trois portaient des pièces de prothèse. Devant ce grave problème, il fallait remonter à la source.

On constata, on énonça, on observa, puis on conclua. Vu que la denture permanente est consécutive, dépendante et intimement liée à la dentition temporaire, semblable à un rapport de cause à effet, il est donc de première importance, c'est là une logique appréciable et sans pusillanisme nous pouvons affirmer, qu'une croissance normale, une poussée ordinaire et une bonne occlusion des premières dents permettent à l'enfant d'abord, à l'adulte ensuite, une saine mastication, une meilleure prononciation, une formation normale des maxillaires et éviteront de nombreuses malocclusions.²

Avant la naissance de l'enfant, la mère devra porter un soin attentif à sa diète. En effet, durant le développement du fœtus, le besoin de calcium et de phosphore est grand surtout quand commence la formation et la calcification des dents.³ Ces aliments nutritifs requis par le fœtus doivent être contenus en quantité suffisante dans la diète de la mère. Pour ce faire, la mère devra consulter un dentiste le plus tôt possible pour connaître les éléments nutritifs les plus importants, les plus adéquats et les plus indispensables, pour assurer à son enfant une formation normale de ses dents.⁴

Ce sont les phénomènes de croissance, de développement, et de l'éruption des dents qui constituent la dentition.⁵ Durant la vie intra-utérine, les vingt dents temporaires commencent à se développer dans le cours de la sixième semaine.⁶ d'abord sur le bord alvéolaire des mâchoires se forme un sillon ou lame dentaire dans lequel naît peu à peu jusque vers la dixième, vingt papilles ou boutons dentaires. Bientôt, des cloisons transversales limitent l'espace occupé par chacun des boutons, qui dès lors se trouvent logés dans de petites cavités distinctes. Au quatrième mois, ces cavités se rétrécissent graduellement, tandis que les germes prennent la forme des dents futures. Enfin, elles se ferment complètement, mais de manière à laisser au-dessus de chaque cavité, ou sac dentaire, une autre cavité plus petite, espèce de sac dentaire de réserve dans lequel se développera plus tard la dent permanente, et qui, dès le cinquième mois de la vie intra-utérine, présente les rudiments d'un bouton dentaire.⁷

Au commencement, ces sacs de réserve sont situés au-dessus des sacs dentaires des dents temporaires. Mais, peu à peu, ils reculent vers la face postérieure de ces dernières, et, lorsque les alvéoles des dents temporaires commencent à se calcifier, ils fournissent de petites excavations dans lesquelles sont logés ces sacs de réserve, qui, pour les incisives et les canines, finissent par se séparer complètement des autres; dans les deux prémolaires, au contraire, ils s'ouvrent au fond des alvéoles des dents temporaires. Tous les sacs de réserve, plus tard, donnent attaches, par leur pointe, à un cordon solide qui s'étend ou bien jusqu'à la gencive, ou bien sous les deux prémolaires jusqu'au périoste revêtant le fond les alvéoles des deux molaires temporaires. Quant aux sacs dentaires des trois dernières molaires permanentes, celui de la première naît avec sa papille dans la seizième ou dix-septième semaine, et cela d'une manière indépendante, à l'extrémité postérieure du sillon dentaire primitif: en se formant il laisse entre lui et la

gencive un petit sac de réserve. Ce n'est qu'au septième ou huitième mois après la naissance que ce sac de réserve, allongé en arc de cercle derrière le sac primitif, s'enfonce dans le bord alvéolaire, donne naissance sur son fond, à une papille, et finit par se détacher complètement de ce dernier pour former le sac dentaire de la deuxième molaire. Le reste de la cavité se range dans la série des autres sacs dentaires et forme le sac de la dent de sagesse.⁸

L'histodifférenciation des dents temporaires débute dans le cinquième mois de la vie intra-utérine. Les cellules se différencient en formation didermique dont le premier donne l'ectoblaste et le second le mésoblaste. Ce phénomène se produit au stade de capuchon dentaire. L'ectoblaste donnera l'émail, le mésoblaste sera la source de la pulpe, de la dentine, du cément, de la membrane péri-dentaire. Au septième mois, toutes ces dents sont en voie de calcification. Celle-ci commence à la pointe du bouton dentaire: il se forme d'abord de petites écailles de dentine qui, dans les molaires, sont multiples à l'origine de même que les éminences du germe, mais qui ne tardent pas à se souder ensemble.⁹ Immédiatement après l'apparition d'une lamelle de dentine, se montre aussi, dans la partie supérieure du sac dentaire, une mince couche d'émail, formée aux dépens de l'organe adamantin, et qui, en s'unissant avec la dentine, constitue les premiers rudiments de la couronne de la dent. Par suite des progrès du développement, la lamelle de dentine s'étend à la surface du germe, s'épaissit de manière à représenter bientôt une espèce de drapeau qui coiffe le germe, puis une sorte de capsule, qui l'entoure exactement de toutes parts.¹⁰

A mesure que la calcification avance, le germe se rapetisse de plus en plus. En même temps, le dépôt d'émail continue à se faire, en procédant à la fois de toute la surface de l'organe, et gagne sans cesse en épaisseur. En même temps, l'organe adamantin et le germe dentaire diminuent graduellement de volume, pour que l'un ne représente plus qu'une pelli-

cule très mince, tandis que l'autre se rapproche de plus en plus de l'état qu'il présentera chez l'adulte. Jusque là, il n'y avait encore aucun vestige du ciment, ni de la racine.¹¹

Lorsque la dent est sur le point de percer, le germe dentaire gagne considérablement en longueur, tandis que l'organe adamantin s'atrophie. Des couches de dentine se développent dans les parties du germe récemment formées, pour constituer la racine de la dent. La dent, poussée de bas en haut par sa racine, commence à exercer une pression sur la paroi supérieure du sac dentaire et sur la gencive, confondue avec lui; elle perce peu à peu ces parties, soumises en outre à un certain travail de résorption, et paraît à l'extérieur.¹² Tout le monde est heureux, bébé a sa première dent.

Dès lors la gencive se retracte sur la dent, et la portion intacte du sac dentaire s'applique sur la racine pour constituer la membrane alvéolo-dentaire. Le développement complet des dents de lait résulte des phénomènes suivants:

a) La racine se forme toute entière, et la couronne se montre à l'extérieur.

b) Par suite d'une exsudation qui se fait à la face interne du sac dentaire, confondu en ce moment avec le périoste, exsudation qui débute dès avant l'éruption des dents, il se dépose du ciment autour de la racine, tandis que la dent s'épaissit par des couches de dentine appliquées à sa face interne et que le germe se rapetisse d'une quantité correspondante.¹³

C'est vers l'âge de six à huit mois que commence l'éruption. Les incisives de la mandibule percent d'abord: deux mois plus tard apparaissent les incisives correspondantes de la mâchoire supérieure. Entre le quatorzième et le vingt-sixième mois percent successivement les premières molaires, les canines et les deuxièmes molaires. Les vingts premières dents sont donc complètes dans la bouche vers l'âge de deux ans et demie. Entre la huitième et neuvième année, les dents temporaires commencent à tomber et sont remplacées graduellement par les permanentes, d'abord au nombre de vingt-huit, mais qui s'accroissent de quatre

entre dix-huit et vingt-cinq ans de façon à former le chiffre total de trente-deux.¹⁴

Les germes des dents permanentes existent déjà chez le fœtus; leur calcification commence quelques mois après la naissance pour les incisives et les prémolaires de même que la première molaire. Elle n'est terminée qu'à l'âge de dix à douze ans pour les dernières molaires. En même temps, la racine des dents temporaires est résorbée, et la dent qui n'est plus retenue dans son alvéole, tombe bientôt.¹⁵

L'évolution des dentitions temporaire et permanente est un phénomène complexe. Souvent la complexité d'un phénomène entraîne dans son rouage des troubles. Nous étudierons donc les aberrations pathologiques de l'engrenage embryogénique et histologique du développement des dents.

Dès le commencement et pendant l'évolution physiologique des dents, et jusqu'à la sortie de la dernière molaire, des lésions nombreuses et très diverses peuvent se produire. Le développement des dents temporaires et permanentes peut à chaque instant, et de plusieurs façons, dévier de sa ligne régulière. En effet, durant l'initiation et la prolifération, il y a formation et prolifération d'un bourgeon dentaire à même l'épithélium buccal. S'il y a déficience dans le développement, nous aurons une anodontie totale ou partielle. L'anodontie se présente le plus souvent sur les incisives latérales, les troisièmes molaires et les pré-molaires. Une anodontie partielle dans la dentition temporaire amène des troubles dans la dentition temporaire d'abord, consécutivement et infailliblement dans la dentition permanente ensuite.¹⁶ Plusieurs théories ont essayé d'expliquer les facteurs étiologiques de l'anodontie. La syphilis, une déficience endocrinienne, le rachitisme, la tuberculose et l'hérédité sont en liste avec possibilité que chacune joue un rôle plus ou moins important. C'est l'hérédité qui semble donner la meilleure explication. Au contraire, l'hyperprolifération, c'est-à-dire le développement excessif du tissu ectodermal, sera la cause d'une dysplasie ectodermale. Ce sera alors une dent dif-

forme, qui causera des malocclusions aux deux dentitions.¹⁷

Au stage d'histodifférentiation, les améloblastes et les odontoblastes se forment pour produire l'émail et la dentine. Si les cellules sont lésées par suite d'une déficience en vitamine A ou D, nous aurons alors une mauvaise formation d'émail ou de dentine selon le stage où ce trouble se produira. Quand la carie attaque de telles dents, elle se rend à la pulpe dans un laps de temps très court, car il n'y a plus une réaction physiologique de la dentine à l'envahisseur. C'est la dystrophie dentinaire ou dentinogénèse imparfaite. Voilà pourquoi on doit prévenir dans la mesure du possible ce trouble de formation ou du moins le reconnaître aussitôt son apparition pour éviter les ravages qu'il causera sur la dentition temporaire. Par ailleurs, une déficience en calcium amènera une sous-calcification de l'émail; les anéloblastes ne jouent plus leur rôle et nous avons une amélogénèse imparfaite.¹⁸

Les anomalies de forme et de quantité prennent naissance durant le stage de morphodifférention. Elles peuvent être des anomalies de réduction comme les dents coniques, les dents de Hutchinson, les dents microdontiques et les dents jumelles. Ces défauts de forme entraînent une dentition temporaire anormale et sera souvent la cause d'une occlusion anormale dans la dentition permanente. Elles peuvent être des anomalies de prolifération telles que: les "Dens in dente", les dents macrodontiques, les dents sur-numéraires. L'existence de dents sur-numéraires est moins fréquente et se rencontre dans la plupart des cas à la région des incisives supérieures, parfois inférieures, mais c'est l'exception. Ce trouble entraîne la formation de diasthèmes, des torsions, des pressions et même des rétentions. Il se présente souvent que ces dents ne font pas leur éruption, parfois elles poussent dans la cavité nasale. A la suite de ces faits, il est important de déceler une dent sur-numéraire incluse ou non.¹⁹

Il est donc évident qu'un trouble, durant la croissance et le développement de

la bouche de l'enfant, aura des répercussions sur sa dentition. La dentition temporaire ne sert pas seulement d'unité fonctionnelle durant sa période de fonction, mais aussi de guide pour l'éruption des dents permanentes.

Supposons maintenant un enfant de trois ans exempt de ces troubles de développement, et voyons son occlusion normale et idéale.

En projection horizontale nous remarquons que: les surfaces linguales des incisives supérieures recouvrent le tiers incisif des surfaces labiales des incisives inférieures et la demie de la surface mésio-buccale de la canine inférieure. La demie de la surface disto-buccale de la canine inférieure et une partie de la surface mésio-buccale de la première molaire inférieure est couverte par la surface linguale de la canine supérieure.

La cuspide mésio-linguale de la première molaire supérieure fait son occlusion dans la fosse centrale de la première molaire inférieure. La cuspide disto-linguale de la première molaire supérieure fait son occlusion dans le sillon mésial de la deuxième molaire inférieure. La cuspide mésio-linguale de la deuxième molaire supérieure fait son occlusion dans la fosse centrale de la deuxième molaire inférieure. La crête triangulaire de la cuspide mésio-buccale de la première molaire supérieure fait son occlusion dans le sillon buccal de la première molaire inférieure. La crête triangulaire de la cuspide mésio-buccale de la deuxième molaire supérieure fait son occlusion dans le sillon buccal de la deuxième molaire inférieure.

En projection latérale il n'existe pas d'inclinaison axiale des dents. A cet âge, en projection frontale, on ne voit aucune inclinaison latérale et les dents sont parallèles axialement.²⁰

En donnant l'occlusion normale idéale des dents temporaires, nous voulons faire ressortir l'étiologie des malocclusions et l'importance d'une dentition temporaire la plus parfaite en vue de la dentition permanente qui suivra nécessairement.

Par suite d'un préjugé qui vaut encore

de nos jours, on ne donne aucun soin aux dents temporaires qu'on sait devoir être remplacées par des dents permanentes. C'est au contraire à cette époque de la vie que les soins sont les plus nécessaires. Il importe beaucoup d'empêcher la chute prématurée des dents temporaires et de les obturer lorsqu'elles sont cariées, comme on le ferait pour les dents permanentes. Il faut à l'enfant comme à l'adulte des dents pour la mastication. Si elles le font souffrir, il ne se nourrira pas: et il en résultera des accidents qui produiront un effet funeste sur tout l'organisme. Leur présence favorise le développement normal de la mâchoire, qui n'est pas encore complètement terminé. Leur chute prématurée entraîne à sa suite la déviation des dents permanentes.²¹

Les os des maxillaires, chez l'enfant qui n'a pas encore de dents, ont une forme et des dimensions très différentes de celles qu'ils auront après la sortie des dents de la seconde dentition. Depuis l'âge de six mois jusqu'à celui de trente mois environ, ils se modifient peu à peu par la sortie successive de divers groupes de dents temporaires; mais à cette époque, ils ne pourraient présenter aux vingt-huit premières dents de la seconde dentition la place qui leur est nécessaire; aussi restent-ils encore, pendant une période de quatre ans, munis de vingt dents. Pendant ce temps ils se développent et l'étendue du bord alvéolaire augmente. Ce n'est qu'après l'avancement de ce phénomène que les dents définitives, en se développant à leur tour, provoquent la chute des dents temporaires pour les remplacer.²² On comprend maintenant que si, durant leur développement une maladie quelconque affecte les dents temporaires, si la carie oblige à les enlever prématurément, si un mauvais entretien de la bouche hâte leur chute, les dents de remplacement n'éprouvant plus à leur sortie l'obstacle nécessaire qu'y avait mis la nature, apparaîtront trop vite, ne trouveront pas sur un maxillaire rétréci la place qui leur est nécessaire, ou se déverrouilleront en contact avec des dents

cariées. De là de nombreuses malocclusions, des difformités de la dentition permanente.

Prenons comme exemple la perte prématurée des molaires temporaires. Que se produira-t-il?

Pour le populo en général, on vous dira: absolument rien! Mais pour nous, cela veut dire beaucoup. D'abord la première molaire permanente ou dent de six ans se mésialera et l'espace réservé à la poussée des pré-molaires permanentes sera partiellement rempli. Ces dernières ne trouvant plus sur les maxillaires l'endroit que leur avait indiqué la nature, feront éruption en dehors de l'arcade ou resteront incluses.²³ Ce n'est pas tout. Les dents temporaires antagonistes dévieront nécessairement de leur position normale. De plus, il y aura zone de rétention alimentaire qui mènera le plus souvent à l'extraction de cette molaire permanente: clef de voûte des arcades. A l'âge de douze ans, lorsque la deuxième molaire permanente fera éruption les mêmes troubles continueront: les cuspes distaux de la seconde molaire, inclinée mésialement, arrivent à une hauteur exagérée, traumatisent la face occlusale de la molaire du haut, qui se carie. D'autre part, l'inclinaison mésiale de la deuxième molaire inférieure ouvre l'espace distal à l'impaction alimentaire, et entraîne ainsi la carie de deux molaires.

Si donc, la résorption et la destruction des dents temporaires ne marchent pas de pair avec l'accroissement et l'éruption des dents permanentes ou de remplacement, ou bien que le développement des maxillaires reste au-dessous de l'accroissement et de l'éruption des dents de la seconde dentition, ces dernières, à défaut de l'espace qui leur est nécessaire pour se ranger toutes dans la ligne normale, se serrent, se heurtent et se repoussent les unes les autres, et se dévient dans tous les sens.²⁴ On pourrait citer des exemples à profusion, pour démontrer l'importance capitale de la dentition temporaire et son inter-relation avec la dentition permanente.²⁴ Il ne faut enlever les dents temporaires, que lorsque leur pré-

sence est un obstacle à l'accroissement et à la direction régulière des nouvelles dents.²⁵

On peut comparer les dents des enfants à un jeune arbre. Leur beauté, leur direction dépendront entièrement des soins qu'on en aura pris dans leur jeunesse. Ce jeune arbre devenu adulte, on l'entre-tiendra, on le surveillera, on l'admira et on ne voudra plus s'en défaire.

Souvent, et à première vue cela peut sembler vrai au profane, on ne donnait aucune ou pas d'importance à la dentition temporaire. Pourtant durant le laps de temps qu'elle se trouve en bouche son importance est primordiale, car elle est la cause de la plupart des malocclusions qui se présenteront plus tard.

L'étiologie des malocclusions durant la dentition temporaire a diverses causes que nous grouperons sous les points de vues anatomique, pathologique, psychique, mécanique, hygiénique ou nutritif.

Dans les causes d'ordres anatomiques, la macroglossie due à une hypertrophie de la musculature linguale aura un effet néfaste dans la disposition des dents sur l'arcade. En effet, ce trouble occasionnera un déséquilibre de la double sangle jugo et labio-linguale ce qui amènera un développement des maxillaires. Nécessairement les dents deviennent trop petites pour la grandeur de l'arcade, et il se produit un espace entre les dents. Le jeune enfant en présence de cette anomalie congénitale s'habitue à rester la bouche continuellement ouverte, il se produira alors une béance de l'articulé. Au contraire, la microglossie détruit la double sangle jugo et labio-linguale mais en sens inverse. L'arcade devient trop petite et les dents s'entassent et s'enchevêtrent. La macroglossie peut se réparer ou du moins s'améliorer par l'intervention chirurgicale.²⁶

La musculature de la lèvre peut-être lésée par le bec-de-lièvre où la double sangle labio-linguale sera en déséquilibre, ce qui influence indirectement la poussée des dents. Encore là, la chirurgie fait des prodiges, si le sujet est pris à temps. Souvent la cause du bec-de-lièvre est un

manque de jonction de bourgeons maxillo-faciaux dû à une insuffisance thyroïdienne de la mère durant la vie intra-utérine.²⁷ Le frein anormal de la lèvre supérieure ou inférieure cause une séparation entre les incisives. A la lèvre supérieure, le frein est hypertrophié et formé de fibres collagènes et de fibroblastes. Il va s'attacher au palais passant entre les incisives centrales.²⁸

A la lèvre inférieure le même phénomène peut se produire. Le traitement idéal est la chirurgie, qui devrait se faire d'après Kelsey²⁹ durant la dentition mixte et plus exactement vers l'âge de onze ou douze ans.³⁰ Enfin le prognathisme mandibulaire peut-être dû à l'hérédité ou d'origine hormonal. Un développement exagéré de la mandibule cause la disharmonie des surfaces occlusantes des dents et une relation faussée des arcades. C'est encore la chirurgie qui donnera les meilleurs résultats en autant qu'elle sera faite vers la vingtième année.³¹ Reconnaître les causes d'ordres anatomiques des malocclusions, diriger les enfants qui en sont atteints, les aider, c'est à juste titre reconnaître l'importance de la dentition temporaire et prévenir les troubles plus sérieux qui surviendront dans la dentition permanente.

Les causes de malocclusions sur les dents temporaires avec effet sur la dentition permanente se présentent souvent dès l'éruption des dents temporaires. Il ne faudra pas toujours, à cette occasion, invoquer l'hérédité et laisser là le problème. Plutôt, on fera une histoire de cas complète; alors seulement nous pourrions constater que certaines maladies à haute température, telles que la typhoïde, la scarlatine, la rougeole et la diphtérie, lorsqu'elles surviennent avant l'éruption des dents, ralentissent le développement et l'accroissement des os de la face. La croissance osseuse se trouve ralentie et les maxillaires n'en sont pas exempts. Les dents faisant éruption sur des maxillaires rétrécis ne trouveront plus la place nécessaire et se placeront en position anormale. Il est donc de toute importance pour le dentiste d'être au courant de ce

fait pour renseigner les parents sur les facilités de prévenir un tel état de chose.³²

La syphilis, maladie importante autrefois mais qui a perdu de la virulence depuis, a comme effet de produire une perte prématurée des dents temporaires, la formation de dents de Hutchinson et une ouverture béante de l'articulé.

Durant l'enfance, outre les maladies déjà mentionnées, il y en a une très importante qui peut amener une hypostéogénie des os. On remarque une éruption retardée des dents temporaires avec perte prématurée, une voûte palatine haute et des procès alvéolaires tournés lingualement.³³ Le rachitisme apparaît le plus souvent à la suite d'un trouble métabolique du phosphore et du calcium, une avitaminose D ou une mauvaise nutrition. L'os demeure mou et l'hypertoncité musculaire a tendance à le déformer. Le rachitisme aura donc un effet désastreux sur les deux dentitions et le faciès de l'individu, qui le plus souvent développera un complexe d'infériorité.³⁴ Pour corriger ce trouble, il faudra prescrire à l'enfant une diète équilibrée, riche en calcium et en vitamine D, en plus d'un atmosphère sain et ensoleillé.

La présence de végétations adénoïdes en général et chez le rachitique en particulier entraînent l'enfant à une respiration buccale, ce qui cause une béance de l'articulé avec protrusion de l'os maxillaire supérieur et une labio-version des incisives. Il est donc de première importance pour le dentiste de prévenir ces troubles de concert avec le médecin.³⁵

D'autres maladies peuvent affecter la dentition temporaire; ce sont les troubles endocriniens. Le dentiste ne doit pas ignorer les effets de certains troubles endocriniens et doit faire un effort pour comprendre leur étiologie. Il y a une relation entre certaines formes de malocclusions et une déficience de certaines glandes endocrines. L'hyperpituitarisme produira chez l'enfant le gigantisme et l'acromégalie. On remarquera une séparation des incisives et des canines, une éruption prématurée des dents temporaires, le prognatisme mandibulaire avec

une labio-version des incisives. L'hypopituitarisme ou une déficience du lobe antérieur sera la cause d'un sous-développement des maxillaires. Les dents normales n'auront plus la place nécessaire pour faire éruption, ce qui causera des troubles sur les deux dentitions. L'hypothyroïdisme apportera un retard assez appréciable dans l'éruption des dents temporaires, parfois un retard de douze à quatorze mois. Elles font éruption le plus souvent en mauvaise posture et leur structure est dérangée. La dentition temporaire par le fait même est pauvrement calcifiée et l'incidence de carie est grande. Il se produit une exfoliation retardée des dents temporaires avec des conséquences sur la dentition permanente.³⁶

En troisième lieu, nous avons les causes d'ordres psychiques. Nous voulons surtout souligner dans cette troisième partie les habitudes vicieuses et les instincts anormaux, qui peuvent devenir, chez l'enfant, une seconde nature, s'ils ne sont pas diagnostiqués par le dentiste. "La prévention des mauvaises habitudes buccales pourra être résolue, seulement lorsque les dentistes connaîtront leurs rapports avec la croissance de l'enfant, à ce moment ils pourront diriger les parents," disait le docteur Herbert C. Foster, de l'Université Temple.³⁷

Le dentiste se voit souvent en face de ces habitudes vicieuses telles que: la succion du pouce et des doigts, la morsure du pouce et de la lèvre et d'autres encore ayant des effets considérables et souvent irréparables sur l'éruption des appareils dentaires. Ces mauvaises habitudes, quand elles se prolongent au delà de quatre ou cinq ans, deviennent une seconde nature chez l'enfant. Elles présentent alors un aspect fort disgracieux et antihygiénique. Elles entraînent des déformations osseuses, une béance de l'articulé, une malformation de la voûte palatine, des labio-versions et des linguo-versions des incisives. Le dentiste doit se faire l'ami de l'enfant d'abord et le conseiller des parents ensuite, pour essayer de corriger les causes nombreuses de malocclusions

et de déformations osseuses chez l'enfant et l'adulte.³⁸

Comme la succion prolongée du pouce est le plus grand facteur de malocclusions et de défauts irréparables sur les deux dentitions, parmi les mauvaises habitudes, nous insisterons sur son étiologie et ses traitements. La succion du pouce peut causer un développement anormal du maxillaire ou de la mandibule selon la position du pouce dans la bouche. Elle peut conduire à la respiration buccale, qui à son tour cause un sous-développement du nez et de la lèvre supérieure. Elle diminue le réflexe du baillonnement et est responsable d'une ouverture béante de l'articulé. Cette difformité défait l'esthétique et requiert pour être corrigée des soins orthodontiques longs et coûteux. Une béance de l'articulé entraîne habituellement une lèvre supérieure courte. La respiration buccale prolongée inhibe le développement de la poitrine et ces individus sont sujets aux infections respiratoires. La succion du pouce serait, d'après le docteur Edward S. Mack,³⁹ un facteur de développement excessif des amygdales. En plus, elle déplace les dents, peut causer une dermatite du pouce et une constriction de l'arche dentaire. Les incisives centrales, par suite de leur labioversion sont plus vulnérables et sujettes aux fractures. Elle entraîne des défauts de prononciation. Il est clair et hors de doute que les mauvaises habitudes peuvent causer de grands dommages aux deux dentitions.

Le traitement préconisé dans de tel cas est surtout d'aspect psychologique. Lorsque ce premier traitement ne vaut pas, alors seulement nous pourrions tenter le traitement mécanique, tels que: placer l'enfant devant un miroir et le forcer à sucer son pouce, l'emploi de médicaments, de gants, etc. . . .⁴⁰

Une fois l'appareil dentaire de l'enfant en place, il faut prendre les moyens de le maintenir dans le plus parfait état possible. On soigne les fleurs de sa serre, les arbres de son jardin; on ne laisserait pas une infiltration d'eau se produire à la toiture de sa maison sans y porter un

remède immédiat. Alors qu'au moindre signe alarmant, on fait venir un médecin, on assiste impassible à la perte successive de ses dents. C'est dire que les facteurs nutritifs et hygiéniques jouent un rôle capital dans le maintien de l'équilibre de la dentition temporaire. Il faut donc donner à l'enfant dès son apparition un allaitement maternel, et par suite, un apport vitaminique en vitamines A, B, C, D; un apport de calcium et de phosphore. De plus, et même si cela lui déplaît, il faut imposer à l'enfant une restriction d'hydrates de carbone.⁴¹

L'hygiène buccal consistera au brossage régulier des dents temporaires, pour éviter qu'une carie prématurée entraîne l'extraction prématurée des dents temporaires.

Quel sera le rôle du dentiste durant le développement et l'éruption de la dentition temporaire en vue de la dentition permanente?

Connaissant la relation intime, les rapports constants, entre le développement et l'éruption des dents temporaires, leur direction, leur conservation, leur chute, et l'éruption normale des dents permanentes, le dentiste devra connaître en plus l'occlusion normale des dents temporaires, pour pouvoir prévenir, corriger ou référer toutes anomalies qui peuvent l'affecter. Il devra de plus avoir un esprit clair des malocclusions des dents temporaires et des moyens les plus adéquats d'y remédier.

Le traitement des enfants au bureau devra être fait avec circonspection et attention; "Celui-là est le vrai sculpteur de la destinée, qui modèle le corps, l'esprit et le coeur de l'enfant," disait Anderson Scruggs. Quel bel idéal peut se faire de sa profession, le dentiste qui ne se contente pas de soigner les dents, mais apprend aux enfants, inlassablement un peu de patience, l'usage de leur volonté, l'ordre, la méthode et les bases de l'hygiène dentaire. Il aura de plus une attention pour les parents en leur donnant des conseils pratiques. Car encore aujourd'hui beaucoup de parents croient que, les dents de lait devant faire place aux perma-

nentes, il est absolument inutile de s'en occuper. C'est là un préjugé malheureusement très répandu et absolument monstrueux dont les enfants sont les victimes. Il est de toute importance, que devant le tort déjà fait, le dentiste devra maintenir l'espace nécessaire à la venue des dents permanentes, en construisant des appareils de maintien. Il faudra alors expliquer aux parents que ce n'est pas là un service de luxe, mais plutôt essentiel.

Nous connaissons l'importance de la dentition temporaire, c'est pourquoi nous devons faire un effort pour la conserver intacte. Le fluor, en application topique, et le fluor dans les eaux communales nous aiderons grandement à le faire. Car le fluor a la propriété de rendre la dent plus résistante, en rendant l'émail moins sensible au contact des acides buccaux. De plus, il agit sur les bactéries, ou les enzymes qui, croit-on, exercent leur action sur les substances organiques et calcaires de la dent. Enfin le fluor, par son action sur la flore buccale, réduit le nombre de bactéries acidogènes qu'on associe habituellement à la carie dentaire.⁴³

L'emploi du fluor prouve qu'il y a six fois plus d'enfants qui n'ont pas de carie dentaire. On peut s'attendre à une réduction de 60% du taux de la carie dentaire. La perte de la première molaire permanente sera diminuée dans l'ordre de 75%.⁴⁴ Enfin, il y aura 90% moins de carie sur les incisives supérieures.⁴⁵ Voilà l'effet merveilleux du fluor et son importance d'action sur la dentition temporaire.

Comme nous venons de le constater, l'importance de la dentition temporaire en vue de la dentition permanente est indéniable. Depuis la publication du rapport de "l'American Dental Association" en 1934, notre profession a grandement évolué. Cela veut-il dire que tout est fait? Au contraire, il reste une besogne énorme à accomplir, c'est-à-dire, qu'il faut absolument profiter du travail de nos prédécesseurs et mettre à profit l'initiative et l'esprit de recherche de nos jeunes dentistes. Il va sans dire qu'à la fin de cette brève esquisse de l'importance de la denture temporaire en vue de la dentition

permanente, nous ne pouvons amener une péroration qui règlera le problème des nombreuses causes de malocclusions, mais nous aurons appris que ce problème est plus complexe qu'il semble à prime abord. De plus, nous pourrions à l'avenir poser un diagnostic et un plan de traitement efficace, non basé sur des utopies, mais plutôt sur une façon précise de voir l'étiologie des malocclusions de la dentition temporaire, de son importance, de sa fonction, de sa relation étroite avec la dentition permanente.

En agissant ainsi, nous y trouverons la fierté d'être ce que nous sommes et les meilleures raisons de confiance et d'espoir en l'avenir.

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Dessins, gravures, tableaux humoristiques

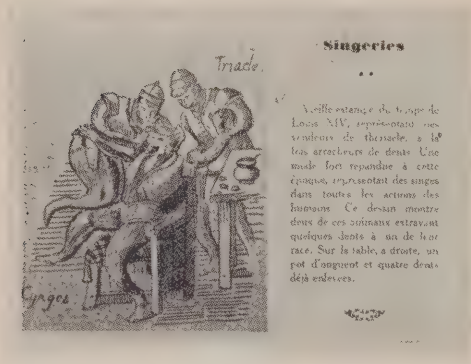
par PAUL-E. POITRAS, D.D.S., Montréal

Des artistes, à tous les siècles, ont dessiné, gravé, peint des scènes représentant la façon dont les charlatans, les forgerons, les saltimbanques tiraient une dent. Dans ces tableaux de genre, l'arracheur de dents est ordinairement le personnage en évidence, monté sur des tréteaux; il expose une série d'instruments de sup-

plice pour provoquer une curiosité morbide. A ses côtés est le patient accompagné de son épouse, apitoyée par les cris de son mari, ignorant l'analgésie, alors que les comparses du "maître", supportés par les gambades et les grimaces d'un singe, amusent la foule par des tours de passe-passe; pendant que



L'Arracheur de dents ou les curieux satisfaits



l'opérateur, dentiste du grand Mogol, affublé d'un collier de dents, vêtu d'accoutrements fantaisistes, débite un boniment pour augmenter le nombre de badauds à qui il vendra des orviétans, bons à guérir tous les maux, et finira son discours, en témoignant de sa virtuosité sans égale à extraire les dents.

La culture latine de la majorité des chirurgiens-dentistes du Québec permet d'apprécier à sa juste valeur l'ironie, la raillerie, les moqueries, les traits comiques, les légendes spirituelles d'un Cham, d'un Daumier, d'un Faivre, d'un Gavarni et d'autres caricaturistes français; d'être ému à la vue des personnages grotesques immortalisés par des anglais tels que Rowlandson et Cruikshank; d'apprécier l'humour de certains américains: Chon Day, Steinberg; d'accepter l'authenticité des décors et des paysages des italiens Longhi, Maggiorotto, Tiepolo; de se rendre compte de la lourdeur des allemands qui me rappelle quelques vers d'une fable de La Fontaine: "L'âne et le petit chien". (livre IV, fable V).

Ne forçons pas notre talent;

Nous ne ferions rien avec grâce:

Combien de dessinateurs célèbres ont eu l'honneur de voir publier leurs œuvres les plus intéressantes dans les revues, les journaux étrangers; alors que leurs meilleures reproductions ont été éditées et annotées par des écrivains connus:

Docteur Cabanès: *Dents et Dentistes à travers l'histoire.* (1928) Bottu, Paris. 2 volumes.

Georges Dagen: *Le dentiste d'autrefois.* (1923) Ash, Caplain, Saint-André, Paris.

E. Holländer: *Die Karikatur und Satire in der Medizin.* (1905) Enke, Stuttgart.

Curt Proskauer: *Iconographia Odontologica.* (1926) Meusser, Berlin.

Les dessins humoristiques ne sont jamais vus d'un même oeil: les uns laissent l'esprit indifférent, ne provoquent aucune réaction, les autres dérident, ils font rire de bon cœur. L'aspect de l'image et la lecture de la légende n'exercent pas une action analogue chez tous les individus.

Le sort réservé aux humoristes est celui de n'avoir jamais l'unanimité. Combien de fois, il est arrivé qu'une caricature, d'abord regardée distraitement, fût négligée, puis ensuite aille, vienne et revive à cause de l'art de l'image et de l'esprit de la légende.

J'ai demandé à des connaissances, à des amis d'apprécier d'une façon impartiale une série d'estampes qui me charment. A ma grande surprise, leur réaction fut différente; certains y ont vu de l'esprit, de la gaieté, de la finesse; d'autres y ont observé de la stupidité, du manque de jugement dans la disposition des sujets, faisant fi d'une signature qui aurait pu modifier leurs idées. Les légendes des dessins dentaires ont l'avantage de refléter la pensée des gens du peuple. Maintes fois, l'inspiration de l'artiste ne naît-elle pas d'une conversation entendue dans la rue?



Une collection doit être composée de plusieurs tendances: la tendance charmante dont le dessin a une ligne soignée; la tendance cocasse: toujours plaisante; la tendance d'avant garde où le futurisme est ridiculisé. De ces inclinaisons, une conclusion s'impose. Puisque les uns préfèrent une certaine manière que les autres refusent à cause d'une conception différente, il demeure évident que les caricatures ont des partisans et des ennemis.

Admettons que tous ces travaux exécutés par de nombreux dessinateurs n'ont toujours pas une valeur marchande, mais il n'en demeure pas moins vrai que le but de cette collection est de m'égayer, de provoquer chez autrui le rire, phénomène escompté par les auteurs, de donner du piquant à la vie en mettant en relief une ou des imperfections morales et physiques, dans le seul espoir de corriger des fautes tout en divertissant. "Castigat riendo mores".

Le chirurgien-dentiste est devenu avec le temps un homme de science, mais, en dépit de son influence personnelle, il continue à offrir aux caricaturistes des sujets plaisants. Il serait malheureux qu'il cessât de s'amuser des travers de ses devanciers, de ceux de ses patients et surtout des siens, vus par les autres.

J'ai des milliers d'images, amassées ici et là, elles sont collées à des cartons de grandeur uniforme, elles sont ressemblées et rendues mobiles par un jeu d'anneaux qui me permet de trouver la



Collection Ferrand

"Spectacles Parisiens" Imagerie d'Épinal vers. 1850

gravure recherchée, de la déplacer au besoin et de m'amuser à l'analyser.

Pendant des années, j'ai feuilleté des quantités de journaux, de périodiques, de revues afin d'y trouver des reproductions dentaires que je découpais. Sans me hâter, j'ai compilé une collection, bien cataloguée, qui m'a fait passer des heures agréables.

L'amour de ma profession, le goût d'acheter, de recueillir, de conserver des instruments anciens, de vieux volumes, etc. m'ont aidé à fonder, en 1935, le musée dentaire de la faculté de chirurgie dentaire de l'Université de Montréal. A cette époque, mon rêve était que les amateurs d'art, les curieux y trouveraient la satisfaction des yeux et de l'esprit, que les étudiants, à la vue de ces reliques professionnelles, se remémoreraient combien les dentistes, disparus depuis longtemps, avaient eu à vaincre de difficultés avant que les études actuelles soient compréhensibles aux élèves en voyant les progrès modernes. A mon âge, devenu moins prétentieux, j'aime me répéter cette phrase latine "Errare humanum est" pour oublier certaines idées préconçues dont je m'enorgueillissais autrefois.

2043 rue Saint-Denis, Montréal.

Nouvelles de l'Association

Dépenses de congrès

Le 6 août 1956, la Chambre des Communes du Canada a approuvé une loi amendement la section II de la Loi de l'impôt sur le Revenu, en ajoutant immédiatement au paragraphe "i" les lignes suivantes:

"(ia) un montant dépensé par le contribuable dans l'année pour ou en rapport avec des frais occasionnés par l'assistance à pas plus de deux congrès qui se rattachent au genre d'affaires ou à la profession qu'il exerce et qui sont organisés par une association d'affaires ou professionnelle."

Le contribuable peut déduire ces montants, quand il fait son rapport d'impôt sur le revenu pour la dite année.

But

"Cet amendement se propose d'annuler un jugement de la Cour d'Echiquier du Canada dans la cause Griffith vs M. R.N. (1956) C.T.C.47, dans lequel la Cour disait qu'un professionnel n'a pas le droit de déduire des dépenses encourues pour assister à des congrès se rapportant à sa profession, parce que ces dépenses ne sont pas faites dans le but d'augmenter ses revenus. Pour 1955 et pour les années à venir, les contribuables qui sont en affaires ou qui exercent une profession peuvent déduire le montant des dépenses encourues pour assister à pas plus de deux congrès par année organisés n'importe où dans le monde par une association d'hommes d'affaires ou de professionnels."

Conséquences

"Par le terme 'affaires,' tel que défini dans la section 139 (1e) on veut dire une profession, un commerce, une industrie ou toute autre occupation qui comporte un risque commercial et qui ne s'apparente pas à un emploi ou une charge." Par cette définition, on ne peut déduire d'un salaire des dépenses encourues pour un congrès. Cependant, d'après une explication fournie par le Ministre des Finances (Hansard, le 31 juillet 1956), le terme "affaire" inclut les fermiers qui appartiennent à un organisme agricole.

Selon les termes bien définis du paragraphe, le contribuable qui se prévaut de cette déduction doit lui-même assister au congrès dont il est fait mention dans son rapport. Cela veut dire qu'une personne qui exerce une profession ou qui a un commerce en société avec une ou d'autres personnes ne peut pas déduire les dépenses de congrès de son associé dans le rapport de la société, puisque la société comme telle ne constitue pas un contribuable. Cf. Parkinson vs M.R.N., 5 Tax A.B.C. 8.

On a limité à deux les congrès chaque année, mais on a pas mis de limite de lieux: ils peuvent avoir lieu n'importe où sur le globe.

Le montant déductible doit se conformer aux prescriptions de la section 12 (2), c.à-d. qu'ils doivent être "raisonnables dans les circonstances."

La Colombie britannique se nomme un secrétaire général

Le docteur W. Ross Upton, autrefois de Calgary, Alberta, a été nommé secrétaire général pour le Collège des Chirurgiens-Dentistes de la Colombie britannique, et de la Société dentaire du District et de la Ville de Vancouver.

Le docteur Upton est un diplômé "42" de l'Université d'Alberta (D.D.S.); durant quatre ans, il a fait partie du Corps Dentaire Canadien, servant dans diverses régions du Canada, en Angleterre et en Europe. Depuis la guerre, il exerce à Calgary et il est le président-sortant-de-charge de la Société dentaire du District et de la ville de Calgary.

Il a rempli d'autres postes, notamment comme président de la Chambre de Commerce des Jeunes de Calgary et comme conseiller de la Chambre de Commerce. Il a aussi rempli des charges à la Canadian Rockies Association, à la Canadian Tourist Association et à Calgary Exhibition and Stampede.

Le docteur Upton a servi un terme comme échevin à la ville de Calgary et il a été fiduciaire au Bureau des Hôpitaux de la ville. Il fut aussi surintendant général de la Knox United Church Sunday School. Le docteur et Mad. Upton sont les parents de deux filles âgées respectivement de six et de quatre ans. Le docteur Upton est entré dans ses nouvelles fonctions le 27 août 1956.

Nomination du docteur Warren J. Riley

L'A.D.C. a été avisé officiellement que le docteur Warren J. Riley a été nommé représentant du Manitoba au Bureau des Gouverneurs. Le docteur Riley succède au docteur K. M. Johnson, qui agit comme président de l'Association. Il fut membre du Collège des Chirurgiens-Dentistes du Manitoba durant de nombreuses années et il est actuellement président de la Western Canada Dental Society. Ayant été président de l'Association dentaire du Manitoba, de la Société dentaire de Winnipeg et ayant fait partie d'autres organisations, le docteur Riley fera profiter l'A.D.C. d'une vaste expérience dans le domaine de l'organisation.

Enquête sur la dentisterie entreprise aux Etats-Unis

On commencera au tout début de 1957 une vaste enquête sur tout ce qui touche à la dentisterie par tous les Etats-Unis. On estime que le coût de cette enquête se chiffrera à \$500,000. Déjà la Fondation W. K. Kellogg, la Fondation des Frères Rockefeller et la Fondation Louis W. et Maud Hill ont versé des octrois dans ce but. Le Bureau des Gouverneurs de l'Association dentaire américaine, à son assemblée bi-annuelle tenue récemment, a voté la somme de \$120,000 pour commencer cette enquête. La relevé sera fait sous la direction de l'Association américaine d'Education, avec comme président du Comité d'Enquête le docteur Virgil W. Hancher, président de l'Université de l'Etat d'Iowa. L'enquête qu'on se propose de faire sera la plus considérable jamais menée dans le domaine dentaire et elle couvrira tous les angles de son exercice. On nommera une Commission de onze membres qui analysera les renseignements et les recommandations qui auront été compilés par une équipe d'experts. Ces onze membres de la Commission seront des spécialistes surtout des disciplines suivantes: Public, Enseignement, Dentisterie, Travail, Direction, Médecine, Hygiène publique, Relations extérieures, Recherches.

Enquête sur l'enseignement dentaire au Manitoba

Le docteur J. K. Paynter de la faculté de chirurgie dentaire de l'Université de Toronto a été chargé le printemps dernier par le Gouvernement d'Alberta de faire une enquête en vue de l'établissement d'une faculté dentaire à Winnipeg. Cette enquête a été terminée cet été et le rapport remis au Gouvernement. On s'attend à ce que ce rapport soit publié prochainement.

M. Joseph T. Staddon nommé gérant du Professional and Industrial Pensions Limited

Le 1er septembre 1956, M. Joseph T. Staddon est entré en fonction comme gérant du Professional and Industrial Pensions Limited, prenant la place de M. E. L. R. Williamson, qui agissait comme administrateur du plan d'assurance-pension du plan de l'Association dentaire canadienne depuis le début. A cause du plus grand intérêt manifesté par les dentistes pour ce plan et à cause du nombre sans cesse grandissant des souscripteurs, il devenait impérieux de réorganiser le Professional Pensions Ltd. pour que son administration puisse répondre à ses besoins. L'administration est maintenant réorganisée et on a amélioré les disponibilités physiques des bureaux; de cette façon, la compagnie devrait être en mesure d'expédier une meilleure besogne. La poli-

tique du plan reste la même; les polices et le taux des primes ne changent pas; ils demeurent, en autant que nous avons pu nous en rendre compte, les plus avantageux au Canada. Pour encore quelques mois, le bureau d'affaires demeure à Brockville, à 3 Market Square East, Ontario. L'adresse postale ne change pas; elle est B.P. 70, Brockville, Ontario. On se propose de déménager les bureaux de la compagnie à Toronto, aussitôt qu'elle pourra trouver les locaux, qui lui conviennent. Monsieur J. A. Howard continuera d'agir comme le représentant de la compagnie dans l'ouest du pays; il sert les membres de l'ouest et conseille les particuliers et les groupes.

M. Staddon, qui a commencé son travail, jouissait des meilleures recommandations. Depuis l'âge de 17 ans, c.-à-d. depuis vingt-et-un ans, il amasse de l'expérience dans le domaine d'administration et de conseil en assurance. Depuis plusieurs années, à part les quelques années de son service militaire, il s'est spécialisé dans la protection des professionnels et d'autres personnes qui travaillent pour eux-mêmes. On l'a rencontré aux congrès et dans les facultés dentaires; il se propose de connaître de plus en plus de dentistes. M. Williamson ne s'occupe plus du plan de l'A.D.C. En quittant son emploi, M. Williamson a tenu à remercier l'Association de sa collaboration et de son appui.

Un ancien président honoré

Le 20 juillet dernier, le Collège Royal des Chirurgiens d'Angleterre a honoré le docteur A. L. Walsh, en lui conférant le titre de "fellow." Le docteur Walsh est l'ancien doyen de la faculté dentaire de l'Université McGill et ancien président de l'Association dentaire canadienne. Le parchemin lui fut remis personnellement. Cet honneur rend hommage au dévouement du docteur Walsh pour la profession dentaire.

La Cour d'Appel d'Ontario condamne la dichotomie

Au cours de la dernière semaine du mois d'août, le Juge A. N. LeBel de la Cour d'Appel a rendu jugement condamnant le partage d'honoraires entre professionnels. La cause survint quand trois médecins contestèrent le droit d'un hôpital de London, Ontario, d'appliquer un règlement du bureau médical de cet hôpital visant à défendre le partage d'honoraires parmi les membres de son personnel; l'hôpital se réservait en plus le droit d'auditer les livres des médecins pour qu'il puisse se rendre compte de dichotomie possible. La cour a reconnu valides les règlements de l'hôpital. Le jugement déclare: "On reconnaît partout le principe qu'une autorité qui a le droit d'élaborer des règlements a aussi le droit d'imposer des sanctions pour faire observer ces règlements; autrement, ces

règlements n'auraient pas de force". En ce qui regarde la dichotomie, le jugement déclare en outre: "Lord Cranworth a légiféré sur ces cas, en disant: "Toute personne, dit-il, qui rend des services basés sur la confiance ne peut passer de contrats dans lesquels il a ou peut avoir des intérêts personnels, ou dans lesquels ceux qu'il est chargé de protéger peuvent souffrir des préjudices."

"Le médecin, comme l'avocat ou tout autre professionnel est tenu alors de s'assurer que ses devoirs professionnels ne viendront pas en conflit avec son intérêt pécuniaire. Et quand un patient consulte un médecin, celui-là doit s'attendre en toute justice que celui-ci n'ait aucun intérêt pécuniaire à le faire opérer, ni dans le choix du chirurgien, ni dans le montant des honoraires du chirurgien. Si le médecin a un intérêt pécuniaire (et la dichotomie constitue un intérêt du genre), il doit le déclarer ou manquer à ses obligations envers son patient et en ce faisant, ce médecin, à mon sens, agit illégalement. Sa conduite ne tombe pas sous le coup de la loi criminelle canadienne; mais il n'en reste pas moins vrai que son geste ou son omission est illégale. Et je ne peux voir comment les règlements généraux qui obligent le médecin à dévoiler à son malade le fait accompli peuvent enlever l'illégalité de l'acte posé."

"Sans doute, après avoir été informé de la combine secrète, le patient a la faculté

de ne pas payer au chirurgien la partie des honoraires qui va au médecin. Et dans le cas où le patient aurait payé les honoraires, avant de connaître la situation exacte, le médecin et le chirurgien sont en dette envers le patient du montant de la ristourne du chirurgien."

Fluoruration aux Etats-Unis

—Dans un rapport publié au sujet d'une expérience de dix ans sur la fluoruration à Grand Rapids, Michigan, le Service de Santé publique des Etats-Unis déclare que les adultes semblent profiter de la fluoruration autant que les enfants. Le rapport déclare: "Les avantages de l'eau fluorurée ne se limitent pas aux individus qui boivent cette eau depuis leur naissance. Les statistiques montrent que les personnes dont les dents étaient calcifiées et présentes quand elles se sont mises à boire de l'eau additionnée de fluor en ont tiré du profit." Depuis 1945, la carie dentaire a diminué dans une proportion de 54 pour cent dans les dents primaires, chez les enfants nés à Grand Rapids depuis que la fluoruration a commencé, et dans une proportion de 60 pour cent dans leur dents permanentes.

—Son Honneur le Maire Robert F. Wagner, de New York, a déclaré que la question de la fluoruration de l'eau de l'aqueduc ne sera pas soumise à un référendum, mais bien décidée par le Bureau des Estimés. Il a réitéré son appui pour cette mesure de santé publique.

L'importance de la mastication pour la pulpe dentaire

Euler, dans la Rev. belge de Stom. I, 1955, p. 3, nous dit: "Nous considérons la mastication énergique comme un des points les plus importants de la prophylaxie de la carie dentaire. Et quand nous devons constater sur les mâchoires préhistoriques que, de ce temps, il n'existait que 2% de caries contre 90% de nos jours, la mastication énergique à laquelle les dents étaient alors exposées, en est certainement une cause principale. Comme explication, on pense évidemment en premier lieu à la pression mécanique qui s'exerce sur le système vasculaire périapical et qui mène à une hyperémie active dans la pulpe et, par conséquent, à une plus grande capacité productive. D'autre part, les sillons et, avec eux, des points de rétention pour les débris alimentaires, disparaissent. En outre, il faut songer au nettoyage naturel provoqué par la friction des aliments."

Médecine et Hygiène, 10 septembre 1956

Comité Exécutif de la Société de Stomatologie de Québec

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Journal

OF THE CANADIAN DENTAL ASSOCIATION

The importance of bracing in partial denture planning*

by COLONEL G. B. SHILLINGTON, C.D., B.Sc., D.D.S., F.I.C.D.

To be successful, a partial denture must be as aesthetically correct as possible, it must be comfortable, efficient and assist in mastication and speech if so intended and, *most important*, must maintain the health of the supporting tissues. Fenner, Gerber and Muhlemann¹ state, "Wearing a removable partial denture prosthesis of any type may be beneficial and/or detrimental to the remaining periodontal structures as the case may be. Prosthodontics is one of the means of establishing conditions for the maintenance of periodontal health. Inadvertently, it may also contribute to the initiation and progress of periodontal disease. It is assumed that horizontal and lateral stress on abutment teeth, among other etiologic factors, may cause or favor the breakdown of periodontal structures."

* The opinions or assertions contained herein are those of the author and are not to be construed as official or as necessarily reflecting the view of the Royal Canadian Dental Corps.

The three principles involved in planning and designing any partial denture are retention, support and bracing. In general, retention and support are usually adequate. In some cases there is actually too much retention provided by the clasps, making it difficult to insert and remove the appliance and, thereby, causing unnecessary strain on the abutment teeth. Maximum support should be provided by incisal and occlusal rests, rigid parts of the framework contacting teeth occlusal to the survey lines and soft tissue saddle coverage.

Bracing is the resistance developed to movement of the appliance in a horizontal plane, be it anteriorly, posteriorly or laterally. It is common knowledge that forces applied against a tooth from a lateral direction are those most likely to cause periodontal disturbances with subsequent loosening of the tooth in the alveolus. This, of course, can be a major tragedy when the tooth loosened happens to be

one retaining, supporting and bracing a partial denture.

The important bracing parts are the reciprocal arms of clasps and minor connectors, rigidly joined together by major connectors. By reciprocal arms of clasps is meant those rigid parts of the appliance opposing the flexible, retentive arms. Rarely is there a requirement for both clasp arms to be retentive. If the buccal arm is retentive then the lingual arm can be made rigid. When clasps are designed with two flexible arms there is always the danger of one arm becoming bent and exerting a force against the tooth, which is not reciprocated by the opposing flexible arm. This can only result in a shorter life for the abutment tooth.

A rigid part, then, opposing the flexible arm ensures that no damage will result should the retentive arm become accidentally bent. Furthermore, this part, when joined by a rigid major connector to rigid parts contacting lingual surfaces of teeth on the opposite side of the arch, materially adds to the cumulative bracing action of appliance. Fig. 1 shows the component parts of this type of clasp. A retentive

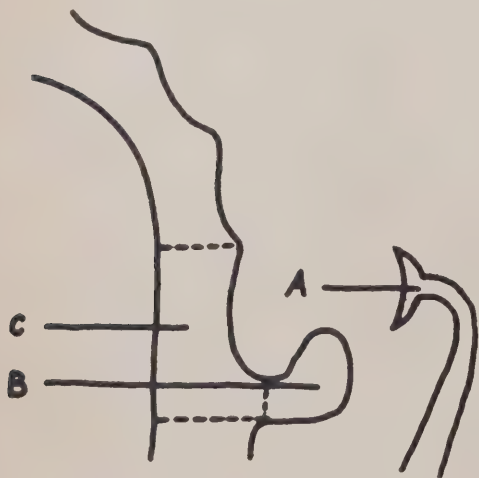


FIG. 1—Component parts of a clasp on a partial lower denture are shown. "A" is the retentive "T" arm, "B" is the rest and "C" the reciprocal and rigid arm, in this case, actually part of the lingual plate which is the major connector.

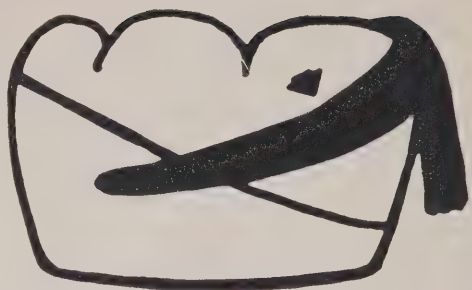


FIG. 2—Even a flexible arm provides some bracing action. The cast circumferential type provides the best bracing where the body and shoulder are placed occlusal to the survey line because they are rigid to semi-rigid.

arm, however, will provide some bracing and, particularly, in the case of the tapering, cast circumferential arm which becomes more rigid as the rest is approached. This is illustrated in Fig. 2. The arrow points to the main bracing part which is semi-rigid and located occlusal to the survey line.

Wherever bracing parts contact teeth they should be placed occlusal to the survey lines, for, since these are rigid parts, they will not spring over the height of contour of the tooth surface denoted by the survey line. In these locations they also act as auxiliary rests.

In designing cases, then, in either arch, the attempt is made to have rigid parts contact lingual surfaces of the remaining teeth, with retentive arms acting against buccal surfaces. It will be seen that this adequately braces the appliance against movement in a lateral direction. This is accomplished with more difficulty in the lower arch because the lingual surfaces of mandibular posterior teeth usually present undercut areas due to their lingual inclination. Thus, survey lines or heights of contour are close to the occlusal surfaces and the use of a lingual plate as the major connector is often contra-indicated because of the space between it and the alveolar mucosa. Fig. 3 shows a cross section of a lingual plate in the bicuspid area. It will be noted that only the upper

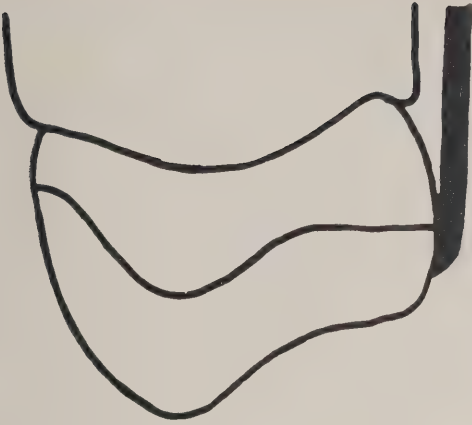


FIG. 3—When a lingual plate is used as the major connector, it can only contact surfaces of teeth occlusal to the survey line and may, in some cases, leave a space between it and the alveolar mucosa.

part of this major connector is actually in contact with the teeth.

There are two types of connectors in partial denture design. First are the major connectors which cross the median line and connect right and left portions of a partial denture. These include posterior palatal bars, anterior palatal bars and inter-rugae types (connecting strips of metal running between the rugae) and in the lower arch, lingual bars and lingual

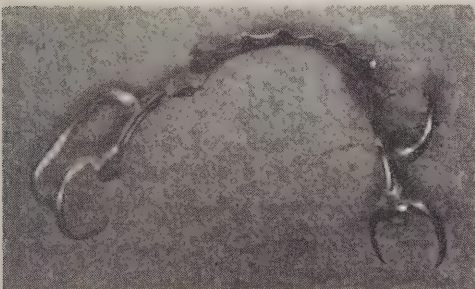


FIG. 4—The ring clasp for the left molar provides distolingual retention and excellent support. The buccal portion is bracing and made rigid through the use of a minor connector. Instead of using a minor connector to make rigid the buccal arm of the right molar clasp, this free-end arm has a greater diameter throughout than the lingual retentive arm and does not taper.

plates. Full palates of metal or plastic are also major connectors. Second are the minor connectors which join portions of a partial denture on the same side.

The three requisites of a major connector are rigidity, correct location and proper contour. Kaires² in his studies of unilateral stress distribution came to the following conclusions: (1) A ring clasp should be reinforced with a buccal arm to reduce its flexibility. (2) A rigid lingual bar is more desirable than a flexible bar in withstanding horizontal stresses. (3) Maximum coverage of denture bearing areas with large, wide denture bases is essential in withstanding both vertical and horizontal stresses. Fig. 4 shows the type of buccal bracing arm on a ring clasp on the lower left molar as Kaires advocates. This makes rigid the buccal portion of the clasp and adds to the bracing qualities of the appliance.

Rigidity of the major connector is essential if there is to be even distribution of force on the various clasped teeth during mastication. If rigidity is lacking, one saddle may move independently of the other, thus subjecting the abutment tooth or teeth, on the side of saddle movement, to extreme forces, culminating in over-

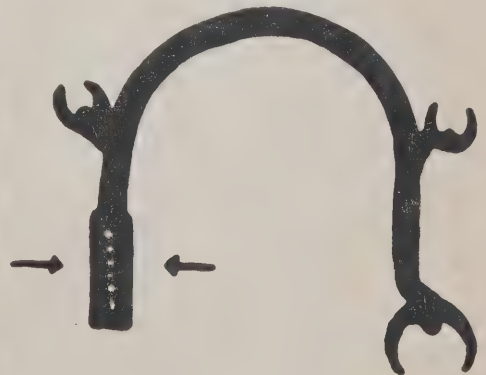


FIG. 5—The arrows indicate in what directions the free-end saddle may move under the forces of mastication. This independent movement is made possible by a flexible major connector and may be the cause of bone breakdown on that side of the arch.

stimulation and destruction of the tooth-supporting tissues.

The effect of this action is seen frequently in a mouth where a free-end saddle, bar lower denture with the conventional wrought gold bar is used. One abutment tooth after the other is lost. Fig. 5 shows the framework for such an appliance. Note that (a) clasps have no reciprocating arms and (b) there is not rigidity of major connector. Mastication of food on the side of the free-end saddle will often produce movement either in a buccal or lingual direction. Eventually the abutment tooth on that side will be loosened by the movement.

Were the major connector rigid, as would be the case when a lingual plate is used (Fig. 6), movement of the free-end saddle would be limited. In other words, independent saddle movement is improbable. Any forces tending to move the free-end saddle, and so loosen the abutment tooth on that side, will be distributed through the rigid major connector to the clasped teeth of the opposite side. This distribution of forces is a safety factor that prevents overloading of individual abutment teeth.

The same basic principles of retention,

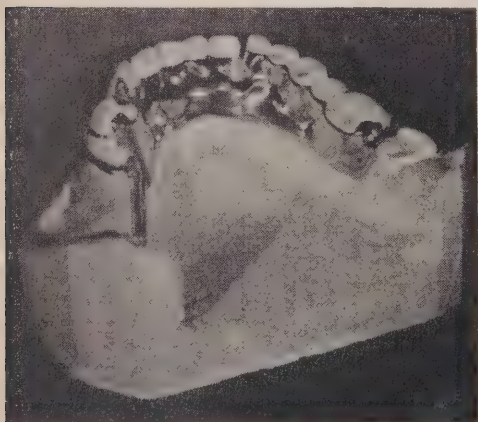


FIG. 6—The lingual plate provides the ultimate in bracing for a partial lower denture. Any tendency for saddle movement on the left is counteracted by all bracing and retentive parts. A high order of home care is a necessity with so much tooth and soft tissue coverage.



FIG. 7—This denture presents the ultimate in bracing action for there is no possibility of movement in a horizontal plane. The same result could have been achieved with a lighter, differently designed casting.

support and bracing can be applied to both wrought and cast partial dentures. In some instances, so long as these principles are not violated, either type of appliance would be satisfactory. The cast denture has an advantage where it is considered desirable to expose the free gingival margin.

Fig. 7 illustrates how bracing is accomplished with a cast appliance in the maxillary arch. Note how the rigid major connectors (posterior palatal bar and lingual plate) brace the appliance against the lingual surfaces of the teeth in such a manner that movement in a horizontal plane is impossible when the appliance is in position. Figs. 8 and 9 are frameworks for other partial upper dentures. In these, note that the reciprocal lingual arms of the clasps are all rigid parts of the appliances.

Where there are bilateral, posterior spaces in the maxillary arch, dentures made of wrought materials can be made almost as comfortable and just as efficient as those cast. If one has decided

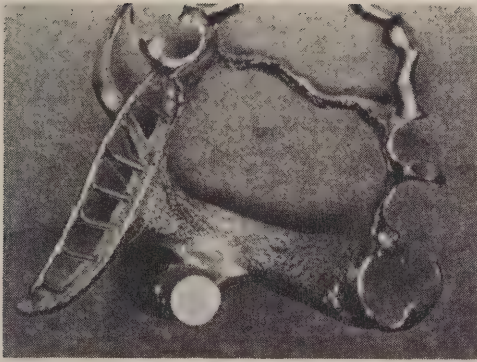


FIG. 8—This framework for a partial upper denture shows how the lingual arm of the cast clasp for the left molar is rigid since it is actually a part of the posterior palatal bar.

on a lingual plate (horse shoe type palate) of plastic, it is always wise to use a posterior palatal bar in order to provide complete rigidity and bracing, whether there are free-end saddles or whether the saddles are completely tooth supported (Fig. 10). Also, many bilateral, free-end saddle cases are best served by a full palate, especially when some doubt exists concerning the quality of the supporting bone. In most cases retention is obtained by buccal wrought circumferential arms, support by rests on the abutment teeth and bracing from the lingual arms of



FIG. 9—The lingual arm of the clasp for the left molar on this partial upper denture framework is rigid and exposes the free gingival margin.



FIG. 10—Since the plastic lingual plate is not sufficiently rigid, a posterior palatal bar and full soft tissue coverage provide the required bracing. The bar helps to distribute stresses more evenly among the three abutment teeth.

the clasps, which are placed occlusal to the survey lines and left embedded in the base material to produce rigidity (Fig. 11). Where it is desirable to expose the gingival margin the wrought clasp may



FIG. 11—The lingual arm of the wrought upper molar clasp is shown embedded in the base material to provide rigidity.



FIG. 12—The lingual arm of this wrought circumferential clasp for the upper molar is rigid and exposes the gingival margin.

be constructed as in Fig. 12, still retaining the rigidity of the reciprocal lingual arm.

Sometimes the wrought denture cannot be made to meet the requirements of retention, support and bracing so that the casting will be the treatment of choice. This condition generally exists in the mandibular arch where sufficient rigidity of major connector is obtainable only with a casting. Neither the wrought lingual bar nor the plastic lingual plate are considered to be rigid enough. This requirement can be met only with a cast lingual bar of sufficient thickness and an indirect lingual retainer (Kennedy bar) as depicted in Fig. 13 or a lingual plate as in Fig. 6. Since both hard and soft tissues

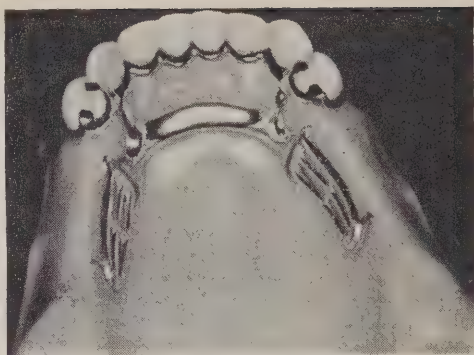


FIG. 13—The lingual bar and indirect retainer (Kennedy bar) provide the required rigidity for this partial lower denture framework.

may deteriorate rapidly when covered by the lingual plate, it is extremely important that the patient maintain an adequate standard of oral hygiene.

SUMMARY

If the assumption is correct that lateral forces are most destructive to the tissues supporting the teeth, the greatest care must be taken to make certain that they are distributed over as many remaining teeth as possible. Only in this manner can lateral forces be reduced on individual teeth. The most effective method appears to be in contacting as many teeth as possible with reciprocal arms of clasps and minor connectors and in using rigid major connectors to unify the various parts of the partial denture framework.

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Periodontal disease is found in animals, primitive cultures, and modern societies.

The physical consistency of a diet which requires vigorous mastication appears to have a beneficial effect in the prevention of periodontal lesions in animals.

The physical consistency of a diet which requires vigorous mastication does not seem to be as effective as proper oral hygiene in the prevention of periodontal disease in man.

Paul N. Baer, D.D.S.

Oral Surgery, Oral Medicine and Oral Pathology, Aug. 1956.

The Vipeholm study on dental caries*

by GORDON NIKIFORUK, D.D.S., M.Sc.(III.), Division of Dental Research and Department of Preventive Dentistry, University of Toronto.

In 1939 the Swedish Government requested the Royal Medical Board to investigate "what measures should be taken to reduce the frequency of the most common dental disease in Sweden". This request led to a study at the Vipeholm Hospital, Lund, of the relationship between diet and dental caries.^{1,2,3}

Vipeholm Hospital is an institution for mentally defective individuals. This hospital, with its large numbers of practically permanent patients, provided an opportunity for a longitudinal study under well controlled conditions. The patients were under continuous observation of trained personnel.

It is of interest to note that the cost of this study was 707,000 Swedish crowns (\$141,400). The expenditure was justified on the basis that if the investigation results in a decrease of caries activity in Sweden by 0.5 per cent for one year only, it would be enough to compensate for the cost of the entire investigation.

PURPOSE OF STUDY

The purpose of the study was to find answers to the following questions:

1. "Does an increase in carbohydrate (mostly sugar) intake cause an increase in dental caries? If so, is caries activity influenced by
 - (a) The ingestion at meals of refined sugar in a non-sticky form;
 - (b) The ingestion at meals of sugar in a sticky form;
 - (c) The ingestion between meals of sugar in a sticky form.
2. Does a decrease in carbohydrate (sugar) intake produce a decrease in dental caries?"

PLAN OF STUDY

The study extended from March, 1945 to July, 1951. The four main periods were divided as follows:

1. Preparatory Period (March 1945-January 1946), during which time analytical methods were evaluated.

2. Vitamin Study Period (January 1946-July 1947) during which time the patients consumed a nutritionally adequate basic diet of 3000 calories. Supplements of vitamins (A, C, D), calcium lactate, 1 mg of sodium fluoride and 1 mg of fluoride in bone meal were added to the basic diet of different groups.
3. Carbohydrate Study I (July 1947-July 1949). All patients consumed a nutritionally adequate diet but deficient in calories. Experimental variables in the form of carbohydrate foods with a caloric value of 1200 were introduced.
4. Carbohydrate Study II (July 1949-July 1951). Patients consumed a diet containing all nutritional essentials and having a caloric value of 2700. Experimental variables were introduced to supply an additional 300 calories.

The 436 patients were divided into a control and six experimental groups. The composition of the diets used in the various groups and the results are given in Figures 1-7. The results are discussed by making reference to each experimental group.

RESULTS

All patients received a diet relatively low in sugar, with no sugar between meals, during the Vitamin Study Period (1946-47). The average number of new lesions was extremely low (0.34 new carious surfaces per patient per year). During this one year period supplements of calcium, vitamins A, C, D, 1 mg of sodium fluoride or bone meal were given to the patients. These items, when added to a well-balanced diet, low in sugar, did not influence the caries activity in the adults studied (Figs. 1-7).

The Control Group consisted of 60 males, average age 34.9 years. This group received a low carbohydrate high fat diet practically free from refined sugar. Caries activity was almost completely depressed in this group. After two years this diet was replaced by an ordinary diet to which was added 110 grams of sugar a day at meal times. This change of diet

* Summary of address delivered to the Academy of Dentistry on March 22, 1956.

THE EFFECT OF FREQUENCY AND FORM OF CARBOHYDRATE INTAKE ON DENTAL CARIES ACTIVITY.

FIGURES 1 TO 7—(Figures reproduced through the courtesy of Davies, G. N., from the *New Zealand Dental Journal*, 51:154, 1955.)

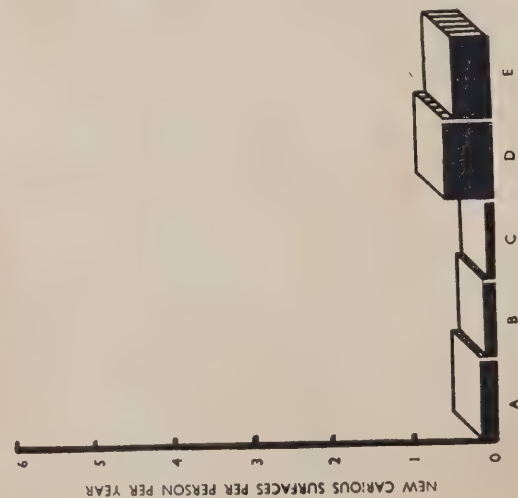


Fig. 1.—CONTROL GROUP

(60 Males. Average age 34.9 years)

DIETARY PLAN FOR EACH YEAR

- A = Basic 3000 Calorie Diet. Total daily carbohydrate 350 grams at meals.
- B = Basic 1800 Calorie Diet. Total daily carbohydrate 130 grams at meals, plus 150 grams margarine.
- C = Basic 1800 Calorie Diet. Total daily carbohydrate 130 grams at meals, plus 150 grams margarine.
- D = Basic 2700 Calorie Diet. Total daily carbohydrate 370 grams at meals, plus 40 grams margarine.
- E = Basic 2700 Calorie Diet. Total daily carbohydrate 370 grams at meals, plus 40 grams margarine.

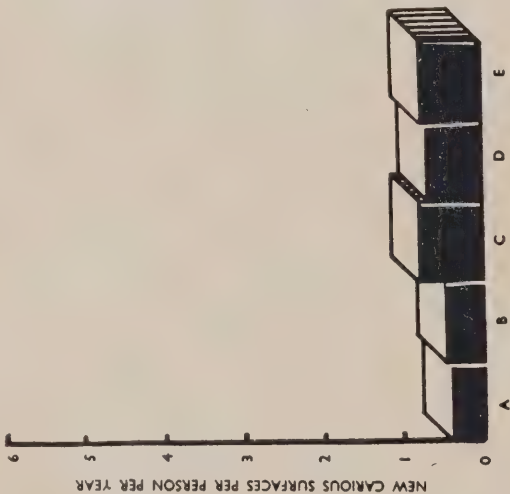


Fig. 2.—SUCROSE GROUP

(57 Males. Average age 34.7 years)

DIETARY PLAN FOR EACH YEAR

- A = Basic 3000 Calorie Diet. Total daily carbohydrate 350 grams at meals.
- B = Basic 1800 Calorie Diet. Daily carbohydrate 130 grams at meals, plus 300 grams sucrose in solution at meals.
- C = Basic 1800 Calorie Diet. Daily carbohydrate 130 grams at meals, plus 300 grams sucrose in solution at meals.
- D = Basic 2700 Calorie Diet. Daily carbohydrate 370 grams at meals, plus 75 grams sucrose in solution at meals.
- E = Basic 2700 Calorie Diet. Daily carbohydrate 370 grams at meals, plus 75 grams sucrose in solution at meals.

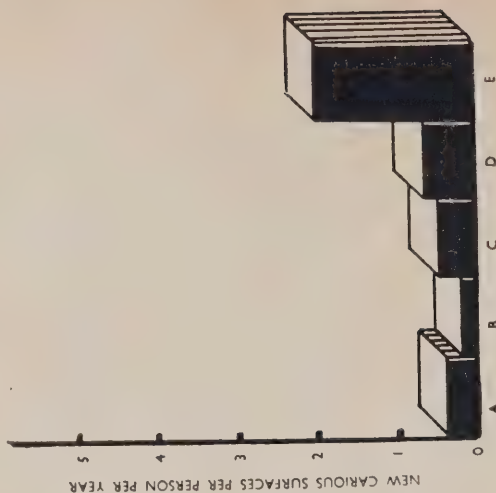


FIG. 3.—BREAD GROUP

(41 Males. Average age 30.4 years)

DIETARY PLAN FOR EACH YEAR

- A = Basic 300 Calorie Diet. Total daily carbohydrate 350 grams at meals.
- B = Basic 1800 Calorie Diet. Daily carbohydrate 130 grams at meals, plus 345 grams high sugar bread at one meal.
- C = Basic 1800 Calorie Diet. Daily carbohydrate 130 grams at meals, plus 345 grams high sugar bread at one meal.
- D = Basic 2700 Calorie Diet. Daily carbohydrate 370 grams at meals, plus 345 grams high sugar bread in four portions—one portion at each meal.
- E = Basic 2700 Calorie Diet. Daily carbohydrate 370 grams at meals, plus 345 grams high sugar bread in four portions—one portion at each meal.

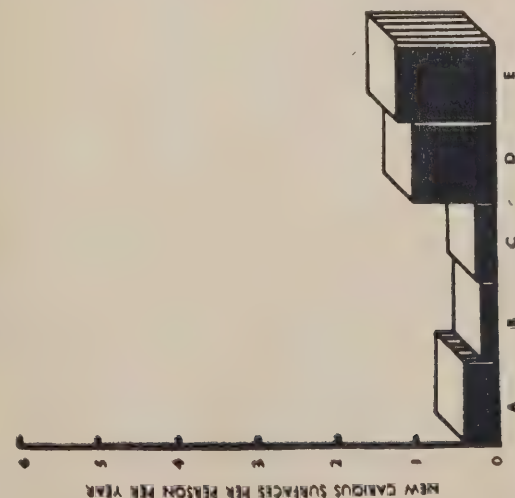


Fig. 4.—CHOCOLATE GROUP
(47 Males. Average age 29.1 years)
DIETARY PLAN FOR EACH YEAR
A = Basic 3000 Calorie Diet. Total daily carbohydrate 350 grams at meals.
B = Basic 1800 Calorie Diet. Daily carbohydrate 130 grams at meals, plus 300 grams sucrose in solution at meals.
C = Basic 1800 Calorie Diet. Daily carbohydrate 130 grams at meals, plus 300 grams sucrose in solution at meals.
D = Basic 2700 Calorie Diet. Daily carbohydrate 370 grams at meals, plus 110 grams sucrose in solution at meals.
E = Basic 2700 Calorie Diet. Daily carbohydrate 370 grams at meals, plus 110 grams sucrose in solution at meals.

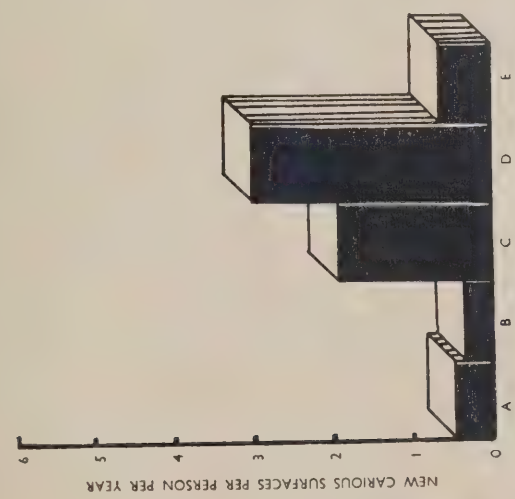


Fig. 5.—CARAMEL GROUP
(62 Males. Average age 35.6 years)
DIETARY PLAN FOR EACH YEAR
A = Basic 3000 Calorie Diet. Total daily carbohydrate 350 grams at meals.
B = Basic 1800 Calorie Diet. Daily carbohydrate 130 grams at meals, plus 345 grams stale high sugar bread at meals.
C = Basic 1800 Calorie Diet. Daily carbohydrate 130 grams at meals, plus 200 grams sucrose in solution at meals.
D = Basic 2700 Calorie Diet. Daily carbohydrate 370 grams at meals.
E = Basic 2700 Calorie Diet. Daily carbohydrate 370 grams at meals, plus 40 grams margarine.

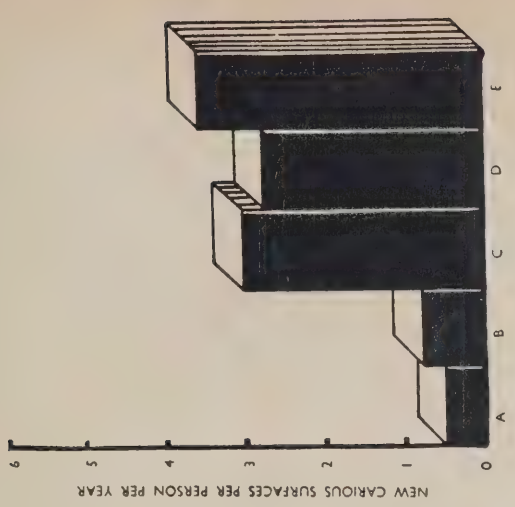


Fig. 6.—8 TOFFEE GROUP
(40 Males. Average age 26.3 years)
DIETARY PLAN FOR EACH YEAR
A = Basic 3000 Calorie Diet. Total daily carbohydrate 350 grams at meals.
B = Basic 1800 Calorie Diet. Daily carbohydrate 130 grams at meals, plus 150 grams margarine.
C = Basic 1800 Calorie Diet. Daily carbohydrate 130 grams at meals, plus 250 grams sucrose in solution at meals.
D = Basic 2700 Calorie Diet. Daily carbohydrate 370 grams at meals, plus 25 grams sucrose in solution at meals.
E = Basic 2700 Calorie Diet. Daily carbohydrate 370 grams at meals, plus 25 grams sucrose in solution at meals.

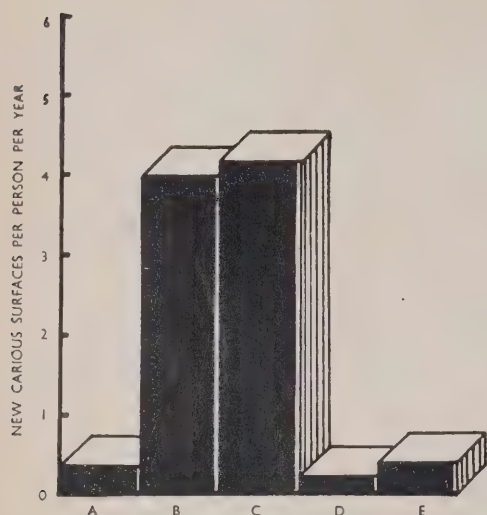


Fig. 7.—24 TOFFEE GROUP
(48 Males. Average age 31.0 years)

DIETARY PLAN FOR EACH YEAR

A = Basic 3000 Calorie Diet. Total daily carbohydrate 350 grams at meals.

In between meal eating—Nil.

B = Basic 1800 Calorie Diet. Daily carbohydrate 130 grams at meals, plus 150 grams sucrose in solution at meals.

In between meal eating—24 Toffees.

C = Basic 1800 Calorie Diet. Daily carbohydrate 130 grams at meals, plus 150 grams sucrose in solution at meals.

In between meal eating—24 Toffees.

D = Basic 2700 Calorie Diet. Daily carbohydrate 370 grams at meals, plus 40 grams margarine.

In between meal eating—Nil.

E = Basic 2700 Calorie Diet. Daily carbohydrate 370 grams at meals, plus 40 grams margarine.

In between meal eating—Nil.

was accompanied by a small but statistically significant change in caries activity (Fig. 1).

Sucrose Group

(57 male patients, average age 34.7 years):

The essential feature of this group was the consumption of sugar in solution at meal times. The consumption of 300 grams of sucrose at meal times per day did not result in a significant change in caries activity (Fig. 2).

Bread Groups

(41 males, mean age 30.4 years; 42 women, mean age 28.0 years):

During the first two years of the study patients received fresh sweet bread with their afternoon coffee; during the last

two years the bread was served daily at all meals and replaced the bread ration of the basic diet from in-between meals. Each 345 gram portion of bread contained 50 grams of sugar. During the first two years the consumption of this bread did not produce a demonstrable caries increase. During the following two years the increase in caries activity was significant in males but not for females. The female group differed in that their oral hygiene was better and the consumption of bread was not as high (Fig. 3).

Chocolate Group

(47 males, mean age 29.1 years):

During the first two years this group received an extra daily ration of 300 grams of sugar in solution at meals for two years, that is, the diet was the same as for the Sucrose Group. At the beginning of the second carbohydrate study the sugar consumption was reduced, and the patients received a 65 gram ration of milk chocolate served between meals. Caries activity did not change significantly when sugar was given in solution. A significant increase in caries activity paralleled the introduction of the chocolate ration (Fig. 4).

Caramel Group

(62 males, mean age 34.9 years at the beginning of the study):

At the beginning of the study this group received 345 grams of stale sugar-rich bread at one meal a day for one year without a significant change in caries activity. During the next year the patients received twenty-two caramels daily, served immediately after breakfast and after lunch. The following year the caramels were served in four portions of five to six caramels each. The consumption of caramels was followed by a significant increase in caries activity (Fig. 5). The caramel ration was replaced by an isocaloric quantity of fat during the last year of the study. During this period the caries activity decreased to its initial level.

8-Toffee Group

(40 males, mean age 26.3 years):

During the first year the diet was low in carbohydrates with practically no refined sugar. This diet had no demonstrable effect on caries activity. With patients on the same basic diet to which 250 grams of sugar in solution had been added along with eight toffees served in two portions between meals for one year, the caries activity was significantly increased. During the last two years the patients received an ordinary Swedish diet, including sugar corresponding to the average consumption. The eight toffees were served in four portions between meals. During this period a further increase in the number of new carious lesions was observed (Fig. 6).

24-Toffee Group

(48 males and 39 females, average age 31.0 and 31.1 respectively):

During the preparatory period this group received a diet containing an amount of sugar corresponding to the ordinary household consumption in Sweden. The introduction into the daily ration

of carbohydrate of twenty-four toffees between meals for two years resulted in a marked increase in dental caries activity. A marked fall in caries activity to the original level was noted on withdrawal of the toffee ration (Fig. 7).

ORAL SUGAR CLEARANCE STUDIES

In conjunction with the Vipeholm Study, oral sugar clearances were investigated (Lundqvist, 1952). Oral sugar clearance was defined as the percentage of the day during which saliva was sugar positive. The differences in oral sugar clearance between the study groups at Vipeholm are indicated in Table I. Significant differences in sugar clearance time between the various experimental groups were found. A significant correlation between a high sugar concentration in saliva in conjunction with a prolonged clearance time and caries activity was found. In view of the connection between sugar clearance and caries, a number of foods have been graded according to their effect on oral sugar clearance. A partial list of foods studied and arranged according to caries potentiality index is listed in Table II.

TABLE I

Preliminary calculation from single individual values of differences between study groups. Mean values of clearance time. (From Oral Sugar Clearance, by Lundqvist, C., *Odontologisk Revy*, 3: Supp. 1, p. 73, 1952.)

Study Groups	Number of Observations	Clearance time % of day Mean*
Control	24	10.10
Sucrose	19	13.45
Chocolate	32	23.50
8 toffee	29	24.74
Caramel	36	34.94
24 toffee	5	57.78
Bread	6	8.88
Comp group I . . .	49	11.25
Comp. group II . .	102	29.57
Total	151	23.63

* Percentage of the day during which saliva was sugar positive.

DISCUSSION

The Vipeholm Study supports the available evidence that intake of concentrated readily fermentable carbohydrates and caries activity are related. This study furnishes direct evidence of this relationship from a longitudinal dietary study under well-controlled conditions. The results also point out the fallacy that only the quantity of sugar consumed is important. The form in which the sugar is served, the frequency of eating and the time during which sugar is consumed are of great importance. Of particular interest is the spectacular nature of the increase in caries activity associated with consumption of sugar between meals in a form that is retained in the oral cavity for long periods of time. Figures 8 and 9 graphically depict the increased caries activity resulting from between meal sugar consumption.

TABLE II

Foods are listed according to a caries potentiality index based on oral sugar clearance times. (Adapted from Lundqvist, C., 1952.)

Food Product	Sugar Content %	Clearance time (min.) for total sugar above concentration levels of:				Caries Potentiality Index
		0.02%	0.2%	2%	20%	
FLUIDS:						
Fruit juice.....	11.5	2	1			3
Tea +2 sugar lumps.....	11.2	3	1			4
Chocolate (milk) + sugar.....	14.2	4	1	0.25		5
SOLIDS:						
Fruit Jelly.....	11.0	2	1.5			4
White bread + butter.....	1.5	4.5	2			7
Biscuits (sugar-containing).....	9.0	11.25	5	1.5		18
MILK PRODUCTS:						
Cheese.....	0.2	—	—	—		0
Ice cream.....	2.4	5	2.5	1		9
FRUITS:						
Apples.....	7.5	3.5	1			5
Pears.....	9.0	4.0	2			6
Marmalade + bread and butter..	16.3	6.25	2.5	0.5		9
Marmalade.....	65.3	5.75	3.5	1.0		10
VEGETABLES:						
Potatoes (boiled).....	0.8	4.5	2	0.5		7
HONEY:						
Honey.....	72.8	11.25	5	1.5		18
Honey + bread and butter.....	19.0	15	7.5	1.5		24
CANDY:						
Chocolate (dark).....	33.7	7.5	3.5	1.5		13
Sweets.....	80	11.25	6.25	3	1.5	22
Caramel.....	64	18.75	5	2.5	0.5	27
Toffee.....	78	11.25	11.25	5.0	2.0	30

The extent to which these results may be applied to the general population should be carefully weighed. Several attributes characteristic of the Vipeholm patients are not applicable to other sample populations.

The average age of the 355 males in the study was 32.2 years at the beginning of the study. All patients were mentally defective (mostly idiots and imbeciles) and the degree of cooperation received may have influenced the results. The poor oral hygiene habits, the fairly low caries activity at the beginning of the study, and the habit of swallowing the sweets without chewing them add to

the difficulty of assessing caries susceptibility of the patients.

The frequency of cementum caries was high in the patients involved in this study, and up to 25 per cent of the new carious lesions were seen in the incisors and canines of the lower jaw. These teeth usually show low caries activity. This distribution of caries is ascribable to the high average age of the patients, with the result that the number of intact surfaces was much higher in the lower canines and incisors than in the molar teeth, many of which were carious or lost before the beginning of the study. Numerous studies support the hypothesis

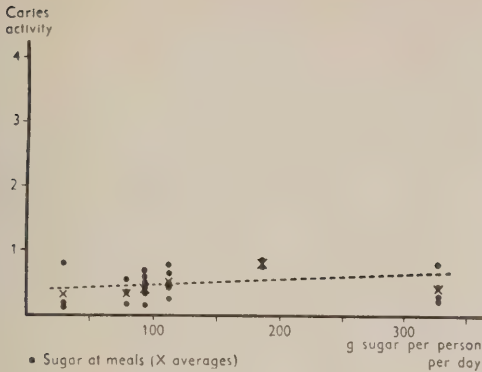


FIGURE 8

The Relationship between sugar consumption at meals and caries activity.

(Reproduced from Acta Odont. Scand. 11:No. 3-4, P. 357, 1954)

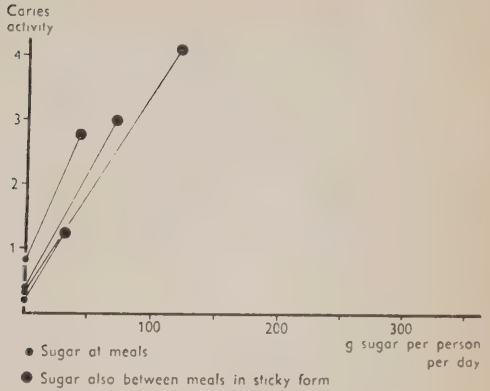


FIGURE 9

that caries rates decrease with age and that the distribution of caries also changes. Age would appear to be the decisive factor in this study in explaining these differences. This infers that the variables influencing dental caries activity in the Vipeholm population will exert a similar and most probably a greater effect on a younger population.

The reliability of the method in the determination of the caries activity is difficult to evaluate. Discrepancies were found between the number of carious surfaces noted at consecutive examinations. The unreliability of the average caries activity based on 40-50 individuals was on the average 0.2 new carious surfaces.⁹

CONCLUSIONS

The main conclusions of the Vipeholm investigation are:

1. The risk of sugar increasing caries activity is great if the sugar is consumed in a form with a strong tendency to be retained on the surfaces of the teeth.
2. The risk of sugar increasing caries activity is greatest if the sugar is consumed between meals and in a form in which the tendency to be retained on the surfaces of the teeth is pronounced with a transiently high concentration of sugar on these surfaces.

3. Increase in caries activity due to the intake of sugar-rich foodstuffs consumed in a manner favoring caries disappears on withdrawal of such foodstuffs from the diet.
4. Carious lesions may continue to appear despite the avoidance of refined sugar, maximum restriction of natural sugars and total dietary carbohydrates.^{2,3}
5. The risk of an increase in caries activity is intensified with an increase in the duration of sugar clearance from the saliva.
6. A high sugar concentration in the saliva, in conjunction with a prolonged clearance time, entails increased caries activity.⁵

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The present status of dental research in Canada

Prepared for the Research Committee of the C.D.A. by
Drs. C. H. M. WILLIAMS and A. W. S. WOOD

The dental profession has the responsibility of caring for one of Canada's major public health problems. Dental disease is the most prevalent and probably the most expensive single disease which affects Canadians. In spite of the most conscientious efforts of the dental profession and in spite of the application of the most ingenious treatment methods, the prevalence of dental disease has not been reduced. As other diseases are eliminated or markedly reduced by preventive methods the uncontrolled scourge of dental disease becomes proportionately more obvious. There is great need for preventive methods and research.

The significance of the great problems which face the dental profession is indicated by the following:

1. INADEQUACY OF TREATMENT SERVICE

It has been estimated that only about one-quarter of the population of Canada receives regular dental treatment service.

2. EXPENSE

The cost of dental treatment service in Canada during 1953 exceeded \$72,000,000. This amount is equal to about one sixth of the total cost of all other medical and surgical expenses. It is easier to grasp this fact when we realize that there are nearly half as many dentists in Ontario to treat dental disease as there are physicians and surgeons to deal with all the illness and injuries of the remainder of the body.

3. PREVALENCE

Dental treatment does not reduce the prevalence of dental disease nor does it confer immunity from subsequent occurrence of disease. Surveys during 1952, 1953 and 1954, in six Ontario communities, where the water supply is not fluoridated, showed that 98.4 per cent of children 12-14

years of age had been afflicted by dental caries. In 1954 a survey of civil employees indicated that 95 per cent to 100 per cent of the age 25 to 45 exhibited one or more manifestations of periodontal disease.

Reduction of dental disease will only be accomplished by emphasizing prevention. Additional and more effective methods for preventing dental disease will only be developed by research. The most pressing need in the dental profession's effort to prevent dental disease is the expansion of fundamental research in dental schools.

Success of a plan of dental research would seem to require:

(I) *Personnel*

There is a great shortage of well-trained senior personnel capable of planning and directing major projects. Dentists who have graduate training in the basic sciences are essential.

A senior research worker should be well trained in basic sciences and he should have sufficient familiarity with the field of study to envisage main problems. He should be suited to and trained for the discipline of research. He should be capable of planning, initiating, administering and reporting studies. These abilities are established by graduate training and are developed by experience. Senior research personnel should be those who are making a career of research and teaching. They should be from our top rank of knowledge and ability. The various organizations which grant funds in aid of research seem to assume that the necessary senior personnel exist and are already in the employ of universities, research institutes or hospitals. Since these institutions in Canada have not adequately provided for this, very few well-trained workers have engaged in dental research.

(II) *Financial Security for Research Workers*

It is unreasonable and unrealistic to hope that a staff of top-ranking ability can be induced to adopt research and teaching as a career unless they are provided with salaries, and other features of financial security, which are reasonably comparable with their potential earning ability in practice. There is a serious inadequacy of provision for senior personnel by the various organizations who support research.

(III) *Facilities*

Adequate housing and physical facilities for research are essential. There is a shameful lack of provision of laboratory space and equipment for research in the dental schools of Canada. The responsibility for this fault belongs almost entirely with the dental profession, particularly with the administrators of the dental schools. In the field of dental science as well as in other branches of study it is axiomatic that progress in knowledge and skill originates in research.

SURVEY OF THE RESEARCH COMMITTEE OF THE C.D.A.

At the annual meeting of the Canadian Dental Association in 1955 the Research Committee presented a report based on a survey of dental research. A summary of the report included the following statements:

(1) There are no dentists engaged in research in three of the five dental schools in Canada.

(2) There are no graduate students engaged in research work in four of the five dental schools in Canada. Therefore, no graduate students in these schools are receiving training in research. It is interesting to note here that a preliminary report of a committee appointed to inquire into the minimum requirements of a graduate department at the University of Toronto stated: "Any definition of a graduate department should commence by recognizing the inseparability of graduate studies from research. It is indeed possible to pursue research vigorously in the absence of graduate students, but not to train graduate students in the absence of active research.

"It is evident that each graduate department (as distinct from an interdepartmental committee) must carry out its function of instruction and research within the limits of a specified subject, which may in turn be defined as a body of knowledge, discreet, coherent, and of sufficient magnitude or extent."

(3) The physical facilities for research and the annual budget for research in most dental schools are nil.

(4) Original research publications are very sparse. During the three years, 1950-53, only one Canadian school presented papers at the International Association for Dental Research.

The above survey represents conditions characteristic of a transitional period. There are definite signs that conditions are improving—almost every school indicated available facilities in other university departments. The real difficulty appears to be associated with inadequate numbers of adequately trained personnel.

ASSOCIATE COMMITTEE ON DENTAL RESEARCH—NATIONAL RESEARCH COUNCIL

There have been some encouraging developments during the past ten years. In 1945 an Associate Committee on Dental Research was established by the National Research Council of Canada. This is singly the most important organization supporting dental research in Canada. The report of the proceedings of the March, 1955, meeting of the committee indicates that dental research projects supported by the funds of the committee were in progress in the following institutions: University of Ottawa, University of Toronto, Queen's University, McGill University, University of Alberta and Dalhousie University. In only two of the above mentioned universities have grants been made to dentists for the year 1954-55. It is of interest that of sixteen grantees who reported at this meeting, seven are dentists and nine are scientists in other fields. It indicates that only seven dentists in two of the five dental schools in Canada had submitted applications which were deemed worthy of support by the committee. It also indicates an encouraging response from basic science workers to the sugges-

tion of the committee that they take an interest in the field of dental research. Reports presented at the meeting indicated that studies were, or are, in progress in the fields of growth and development of the dento-facial complex, bacteriology of periodontal disease, histochemistry of tooth structure, chemistry of dental tissues and saliva, and the use of radioactive substances to study tooth and jaw formation. The objectives and the quality of the studies appear to be good but the number of projects should be greatly increased—provided well-trained personnel participate.

THE DIVISION OF DENTAL RESEARCH, UNIVERSITY OF TORONTO

In 1952 the Division of Dental Research was established at the Faculty of Dentistry, University of Toronto. Beginning in 1946-47, young graduates in dentistry who had exceptional academic records were encouraged to adopt research and teaching as a career. They were provided with fellowships to encourage them to proceed to graduate study in the basic sciences. It is indicative of a far-sighted and highly creditable policy that an important part of the funds for these fellowships was furnished by the Canadian Dental Association. The Kellogg Foundation also contributed significantly to their training. Five graduates of this training program constitute the nucleus of the senior personnel in the Division. It is significant that all of the studies in progress in the Division of Dental Research are of the type which may lead to prevention of dental disease.

The dentists of Ontario have given very convincing demonstration of their interest in dental research. During a fund-raising campaign in 1952-53 they pledged to contribute \$142,000 to aid in the establishment, and the first five years of the development, of the Division of Dental Research. This action has earned the commendation of ministers of health, and of executives of universities, professional societies, corporations and foundations. As a result corporations, foundations and

wealthy individuals have contributed an additional \$110,000. The dentists of Canada should, with pride, accept every opportunity to advocate to all levels of society the desirability of supporting a wide-spread expansion of dental research.

FINANCIAL SUPPORT FOR DENTAL RESEARCH

Financial support for dental research in Canada is small in amount. It appears that about seven tenths of one per cent of the money available for research relating to health of the population is available for dental research. Grants in support of new workers in the field of research or of those with little experience are adequate in number for the present number of applications. The annual stipend allowed is small and it would certainly discourage any young graduate to whom amount of income is important. However, most of the younger research workers proceed to graduate degrees and this is considered by some to be a sufficient incentive to accept a low standard of income, about \$2,000 to \$4,000 for young graduates. Provision for salaries for senior research personnel is markedly inadequate. This condition appears to constitute a main obstacle to expansion of the dental research program in Canada.

NATIONAL RESEARCH COUNCIL FELLOWSHIPS

There is provision by the Associate Committee on Dental Research of the National Research Council of Canada for graduate and senior fellowships. The graduate fellowships with a value of up to \$4,000 per annum are open to graduates in dentistry with high academic standing. Senior fellowships with a value of up to \$5,000 per annum are open to graduates in dentistry who have had experience in research work.

CANADIAN DENTAL ASSOCIATION STUDENTSHIPS

The Canadian Dental Association through the Research Committee provides for studentships for suitable candidates

who wish to pursue a career in teaching and research. Over \$23,000 has already been spent to assist some twenty candidates to obtain training in a wide variety of basic science subjects.

RECOMMENDATIONS

The real difficulty in attempting to promote dental research in Canada appears to be associated with inadequate numbers of adequately trained personnel. This situation must be faced by the schools of dentistry in Canada.

From time to time every school has changes in its staff. Where a new appointment is to be made, no effort should be spared to "recruit" from the intellectually adventurous and to urge the prospective appointee to take advantage of the C.D.A. studentship program and the National Research Council fellowships in order to prepare for a career of teaching and research. If each school were to take advantage of this program at no cost to

itself, and send at least one suitable candidate, an important nucleus for research in the institution would be assured.

The inauguration of such a program in a school would assist immeasurably in securing excellence in our schools in the manner recently suggested by a university president "by getting the best men and women to teach the best students under conditions that encourage concentration on scholarship and research."

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It is surely one of the challenging facts of our times that we fail or delay in making the fullest use of knowledge derived from research. If the results of our revolutionary advances in technology are to be translated into benefits for the individual citizen and the community, we must have the widest possible range of vision, courage, and initiative.

John W. Knutson, D.D.S., Dr. P.H.
The Journal of the Michigan State Dental Association.—Sept. 1956



Cornerstone laid for new dental building at Dalhousie

On Friday, November 2, 1956 the Honourable Alistair Fraser, Lieutenant Governor of Nova Scotia, performed the official laying of the cornerstone for the dental building of Dalhousie University, Halifax, Nova Scotia.

"With profound pride in Dalhousie's past and present accomplishments, I declare," said the Lieutenant Governor, "that here has been well and truly laid a stone to be the cornerstone of a fine new building dedicated to the health and welfare of our people. Into this structure will go our best wishes, our hopes for the future and our sure faith that these hopes will be abundantly realized."

Brigadier H. V. D. Laing, Chairman, Board of governors, Dalhousie University and Dr. K. M. Johnson, President of the Canadian Dental Association also gave short addresses. J. Philip Dumaesq, the architect of the building was presented with a sealed box by Brigadier Laing, which contained a Bible, 1956 Dalhousie University Calendar, the 1956 Transactions of the Canadian Dental Association, the day's newspaper and other pertinent documents. This sealed box was placed in the well behind the cornerstone. The architect then called upon the builder R. B. Cameron to report on the state of the building.

With the following words, the President of the Canadian Dental Association, Dr. K. M. Johnson addressed the gathering:

"One of the great ambitions of every

man is to be a builder. This is as true today as in the days of the great cathedral builders—in fact Mr. Dean, this is a cathedral—a cathedral dedicated to the health of our nation.

"Within these walls men and women will learn not only what we know today but we trust will bring body and substance to the dreams of advancement in our chosen profession, thus to enable us, as dentists, the better to serve our fellow men. We thank God for those who have made this step possible.

"This is a milestone on the way from the drawing board to the completed edifice. Let us pause to honour these men who have made such a contribution to Canadian dentistry by serving as Dean in this, the oldest dental faculty of a University in Canada: Dr. Frank Woodbury, Dr. F. W. Ryan, Dr. George Kerr Thomson, Dr. William W. Woodbury, Dr. J. Stanley Bagnall, and now Dr. James McLean. These men, all men of great stature, served well and we rejoice with you, who are carrying on the great tradition in expanding this school. There are many others who made great contributions but I shall not embarrass them by naming them. I assure you that every member of the Canadian Dental Association is proud of this great university this day. And as we dedicate this building to this highly specialized health service, we must rededicate our lives to our beloved profession and to God."

ABSTRACTS



Present Status of Controlled Fluoridation in the United States

Prepared by Division of Dental Public Health, Bureau of State Services,
Public Health Service, Department of Health, Education & Welfare.
Public Health Reports, October, Vol. 71, No. 10.

From 1945, when controlled fluoridation was introduced, through May 2, 1956, 1,352 communities served by 727 water supply systems instituted fluoridation. Sixty-six communities (5 per cent of the total) served by 54 water supply systems discontinued fluoridation. Of these, 7 communities, each one its own water supplier reinstituted the procedure.

By May 2, 1956, a net total of 1,293 communities with 26 million people were served by 680 water supply systems to which fluoride had been added.

The greatest increase in the initiation of fluoridation occurred during 1952. Subsequently, annual increments in number of communities, water supply systems, and population have been at a lower level.

Of the 1,255 communities using controlled fluoridation at the end of 1955, nearly 30 per cent are under 1,000 in population, or of size not specified. Most of the latter are quite small since no population figures were available from Bureau of the Census sources. A little more than 30 per cent of communities using fluoridation range in size from 1,000 to 5,000 population. Another 30 per cent are between 5,000 and 50,000 population. The remaining 6 per cent are over 50,000 in size.

When these figures are compared with

the total number of communities of given size, nearly 45 per cent of the communities of 500,000 population or over are fluoridating their water supplies, and from 20 to 30 per cent of the communities of 10,000 to 50,000 population. For communities of less than 10,000 population, the percentage of fluoridation ranges from 4 to 14 per cent. The proportion of communities that have instituted controlled fluoridation increases almost directly with grouped community size.

It is interesting to note that of the 1,255 places with fluoridation as of December 31, 1955, more than a thousand owned their own water plants, and in 160 places the plants were under private ownership. Of the privately owned plants 68 per cent were in places of under 10,000 population. Distributed on the basis of size of towns, however, 17 per cent of the places under 10,000 population and 9 per cent of the towns over 10,000 had privately operated water plants.

In almost all communities the problem of whether or not to fluoridate is decided by the governing body. In only 6 per cent of the communities was the question of fluoridation decided by referendums.

This census shows that in May 1956, after more than 10 years of water fluor-

idation, approximately 26 million people in about 1,300 communities, or roughly 1 out of every 4 people using central water supplies, were drinking water with an adjusted fluoride content.

During the last few years, the number of people drinking fluoridated water has increased by about 4 million persons a year, and there is every reason to believe that this rate of increase will not

decline and may very well become greater. However, as of May, 1956, only 6 per cent of the towns and villages of under 10,000 population had fluoridation even though some 45 per cent of the cities of more than 500,000 population were using fluoridated water. In numerical terms, this means 10 cities of over 500,000 persons do not have fluoridation and some 16,000 communities of under 10,000 population are not using fluoridated water.

Tissue Changes During Aging

by MAURY MASSLER, D.D.S., M.S.

Oral Medicine, November 1956, Vol. 9, No. 11.

The oral tissues, like the tissues in other parts of the body, change markedly as the patient grows older. There is, of course, a wearing down of the teeth, the rate depending on the character of the occlusion, the muscular pattern and, above all, the abrasiveness of the diet.

More important, the periodontal structures (the gingivae, alveolar bone, periodontal membrane and probably also the cementum) undergo typical fibrotic changes. The various cells become less active. The osteoblasts and fibroblasts are able to repair the wear and tear of daily function less rapidly and less completely, with the result that as age advances the periodontium becomes atrophic. Because the periodontium is subject to greater trauma and more injuries than other tissues of the body (including the joints), atrophy is seen earlier in these tissues than elsewhere. Most loss of teeth during middle age is the result of degenerative changes in the periodontium. It is not uncommon to find the patient edentulous before the age of 40 because of progressive atrophy of the periodontal tissues (usually with secondary infection).

The attached gingivae lose their stip-

pled appearance and become edematous and smooth. The buccal mucosa is dry, inelastic and often wrinkled.

Most characteristic are the smooth, atrophic tongue and angular cheilosis. Abnormal taste sensations and burning sensations are common and probably are due to progressive atrophy of the taste buds, hastened by concomitant dehydration, iron deficiency and, above all, vitamin B complex deficiencies. Clinical signs of mild to moderate vitamin B deficiency states are so common in the aged as to be regarded as "normal". As a result, the oral symptoms of vitamin B complex deficiencies (atrophic glossitis, glossodynia, angular cheilosis, cheilitis, and so forth) are frequently considered to be the result of diminished vertical dimension and poor oral prosthesis when, in fact, the latter merely aggravate the clinical manifestations of the basic deficiency state. This thesis is supported by the fact that the clinical symptoms cited above are greatly alleviated by massive doses of vitamin B complex, although they do not disappear entirely unless there is a concomitant reduction in carbohydrate intake and an increase in proteins.

Importance of Education—not Training “Research Training for Dental Specialists”

by JOSEPH C. MUHLER, D.D.S., Ph.D.

Journal of Dental Education—Volume 20, No. 3—May 1956.

Good research requires strict disciplinary training and a high degree of education. There is a distinct difference between education and training, the most important distinguishing characteristic being the lack of originality demonstrated by a person “trained” in a particular field. All of us in chemistry have had the experience of working with a trained analyst. He does his work well, and usually with a high degree of accuracy. As long as the experimental procedures are well defined and outlined for him, all is well. However, when the unknown solution under investigation turns blue instead of red he is unable to straighten out the problem or correct the difficulty. One may say he lacks the experience for being able to do such a task. I say he lacks the education, for if he were educated, or had the ten-

dencies to become educated he would be sufficiently motivated to find the solution for himself. This, then, constitutes original thinking and distinguishes the true research worker from the technician. Additional characteristics are those which stimulate an educated person to continue to analyze, criticize, reassess and test evidence on both sides of any question. Further, the true scholar's mission requires the examination of unpopular as well as popular ideas, of abhorrent and perhaps even dangerous facts, for imagination and investigation fervor are basic factors contained inside an educated worker. This has many additional ramifications, but suffice it to say, our ambition in dental schools should be to educate students. This is an important point and remains as the highest challenge to the professor in his relationship with students.

Lateral Force in Relation to the Denture Base and Clasp Design

by LAWRENCE A. WEINBERG, A.B., D.D.S.

The Journal of Prosthetic Dentistry, November 1956, Vol. 6, No. 6.

Lateral force on a partial denture initiates vertical and horizontal rotational components. If the framework and abutments are rigid to each other, the occlusal rests on the side opposite the application of lateral force tend to resist the vertical rotation. This helps prevent the harmful tipping action of the abutments on the side of the lateral force application. Lack of rigidity allows a tipping action of the teeth and prevents the proportionate sharing of the load by the opposite side.

The horizontal rotational pattern depends on the denture base location, the area of the application of the lateral force and the relative location of the abutments. There are many variable factors but some

general principles can be outlined. Flexibility in the framework or clasping design places most of the rotational stress on one or two abutments. With rigidity, we can rationalize the pattern of horizontal rotation and plan a better design to help resist this tendency and, by so doing, spread the stress to all abutments.

With the aid of good roentgenograms, study casts, and accurate clinical examination, we can evaluate the relative resistance of each abutment to the various types of forces that may be exerted on them. Provision can be made then, in the partial design, to prevent overloading and to give a more equal distribution of lateral stress.

EDITORIAL

A fee schedule—pro or con?

Should a dentist wish to engender lively discussion when he gathers with several of his confreres, he need only initiate a discussion on the merits or demerits of a fee schedule. Almost everyone in the dental profession has definite opinions, one way or the other, on this subject. Such opinions are evidence in themselves that there are strong arguments pertaining to both points of view, and it is therefore the purpose of this editorial to discuss these considerations and attempt to arrive at a reasonable conclusion.

It is often contended that fee schedules make no provision for competence, initiative, integrity, training, or professional reputation. If a set fee is established for any given operation, it makes no difference whether the service is rendered in accordance with the highest consideration of professional attention. It then follows that a continuance of such a programme will serve only to reduce the efforts of the best to the service of the poorest. The desire to improve, which characterizes the professional man, will be seriously inhibited.

A further consideration is one of public acceptance. It has been stated that the existence of a tariff will leave with the general public the feeling that a closed corporation exists — a group whose primary concern is the maintenance of high levels of remuneration. Such an attitude, it is thought, is not conducive to the engenderment of professional confidence and regard in the thoughts of the people who seek our services.

Some show concern over the possible future of dental organizations whose

members render their professional services on the basis of indemnification schedules. If initiative is destroyed, what is the use of self-betterment which attendance at scientific sessions encourages? If society meetings are poorly supported and no reason exists for the continuance of association activities, why not disband the organizations?

The foregoing are cogent arguments and merit sincere and earnest consideration. But let us look at the other aspect.

We must recognize the necessity for fee schedules under certain circumstances. Such agencies as the Department of Veterans' Affairs, the various provincial Workmen's Compensation Boards, and certain governmental public health groups must, for obvious administrative reasons, operate under fee schedules. And how are these schedules to be developed equitably if the dental organizations themselves take no part in their formulation? Is it sufficient for a small group usually representing the provincial legal body, to decide upon and attempt to negotiate fees without general evidence that such fees are acceptable to the membership at large? We think not.

Let us recognize too, that Voluntary Pre-payment Plans are receiving intensive study in many quarters and it is not difficult to envision a time, in the reasonably near future, when plans will be developed which meet the requirements and will prove to be workable. Should not all members of the profession be seriously concerned about the methods of payment proposed for such schemes? We think they should.

The Canadian Dental Association at its 1954 Board of Governors meeting in St. Andrews-by-the-Sea, adopted with a recommendation for as early implementation as possible, the establishment of voluntary Pre-payment Plans based on accepted principles. Item number five in these tenets follows:—

“Fees for dental services paid to dentists under the plan should be determined by authorized representatives of dentists, who will render the dental services. In all cases fees should be consistent with the provision of high grade dental services.”

It therefore would appear to be in the interests of the profession to develop a fee schedule which is equitable for the members and permits the rendering of a high quality dental care.

Another activity which is receiving great attention is the development within unions of the desire to utilize certain accumulated funds for the provision of health care for their members. Most dentists are aware of the plan presently operating on the west coast of the United States, developed by the International Longshoremen's and Warehousemen's Union and the Pacific Maritime Association.

Some unions have accumulated enormous funds and it is only natural that health care requirements which include dental services are suggested as logical avenues through which these funds may be expended. The operation of a successful plan within one union will most certainly encourage other labour organizations to develop similar schemes. Again fee schedules are mandatory for any discussions pertaining to the development of such plans.

Younger members of the profession probably find that their greatest difficulties in the early years of practice revolve around the administrative aspects of their practices. There is a general reticence among most established dentists to discuss fees with the younger practitioner other than in the broadest of general terms which offer little or no help in solv-

ing the many complexities coincident with the establishment of fair and equitable fees. It has been stated that when a fee is assessed one of three things happens — the patient has been sacrificed to the interests of the doctor, the doctor has been sacrificed to the interests of the patient, the interests and welfare of both patient and doctor have been protected. Obviously the latter consideration is the goal for which we should strive. To have little or no official guidance available for the younger practitioners seems inappropriate in view of the possibility of misunderstandings and subsequent public relations difficulties with their patients.

It was stated in this column last month, that there appears to be a growing tendency among patients to seek mediation for differences or misunderstandings arising between them and their dentists. Fees, naturally, are the most prevalent topic of dissension. This writer, in another capacity, is called on quite frequently to deal with such matters. It is our opinion, considering all aspects involved, the vast majority of quoted fees are, commensurate with good service, reasonable and fair. Patients by and large have little or no appreciation of the personal investment a dentist has in himself, the operating cost of a practice, and the provisions necessary for vacations, sickness and retirement, which must be made from current earnings. An existing fee schedule recognized as fair and reasonable by the profession, would, we are certain, facilitate the mediation of such disputes. Rather than most people being concerned with “a closed corporation” we find they are more unprepared to accept a situation in which they are obligated to pay a fee for which they believe no basis exists except in the mind of the dentist concerned.

Precedents for fee schedules are easily found. Because of the medical profession's participation in Voluntary Pre-payment Plans, the Medical Associations, in almost all provinces, have developed indemnification schedules. The legal profession has long had a tariff, and taxing officers to mediate disputes. Surely the same consid-

erations of competence, initiative, integrity, training, and professional reputation apply to these professions as well as they do to dentistry.

In neither instance however is a fee schedule a rigid or an unalterable entity. Preambles employed with these schedules state most unequivocally that the suggested fees are average fees and are not necessarily to be considered either as maximum or minimum in character. They are average fees to meet average circumstances. There is no more reason to believe that any two appendectomies meet exactly the same set of circumstances, which could include the patient's general physical condition, complexity of the surgical or anatomical problems concerned, the time consumed, the competence of the surgeon and the patient's ability to pay, any more than any two extractions are precisely identical in nature. But at

least the Schedule offers a guide, approved by the profession at large, in order to facilitate the establishment of fees which are reasonable and just.

Any system which depends upon cooperation of human beings is open to abuse. That somewhat trite and threadbare aphorism "one gets only what he pays for", is not always true. There are practitioners possessing the highest qualifications and rendering services which are as close to perfection as humanly possible, who, for several reasons, find it difficult to assess fees commensurate with their skills. On the other hand if we are honest we must also agree that sometimes fees are charged out of all proportion with the quality of the service or value to the patient.

There is a weight of argument for both points of view. It is our personal opinion, however, that the preponderance of reason favours a recognized schedule of fees.

The Members of the Committee on Publications, the Associate Editors, the Business Manager, and the Advertising Manager, join me in extending to our readers and advertisers best wishes for a Merry Christmas and a Happy and Prosperous 1957.

WESLEY J. DUNN—Editor.

The Library

The Library of the Association consists of practically all the books related to dentistry which have been published during the last ten years. A considerable number of volumes published earlier are also available.

The Library has been made possible through the generosity of interested members of the Association. All monies received are used for the purchase of books. The Association bears the cost of administration.

For the benefit of members and all others interested, the library is open daily from 9.00 a.m. to 5.00 p.m. except Saturdays and Sundays. All dental periodicals are available.

Books may be borrowed by the membership by writing: Librarian, Canadian Dental Association, 234 St. George St., Toronto.

Additions

BOURNE, G. H.: The biochemistry and physiology of bone. 1956. 875 p. illus.

CHERASKIN, E., and LANGLEY, L. L.: Dynamics of oral diagnosis. 1956. 533 p. illus.

DJINDJIAN, A.: Manuel de l'infirmière assistante en odonto-stomatologie. 1956. 215 p. illus.

SAMSON, E.: Progressive practice in dentistry. 3rd ed. 1956. 328 p.

WEST, G. I.: The dental assistant's handbook. 2nd ed. 1956. 115 p. illus.

The Association

Convention Expenses

On August 6th, 1956, Bill 418 was passed by the House of Commons of Canada amending section 11 of the Income Tax Act by adding thereto, immediately after paragraph (i) thereof, the following paragraph:

"(ia) an amount paid by the taxpayer in the year as or on account of expenses incurred by him in attending, in connection with a business or profession carried on by him, not more than two conventions held during the year by a business or professional organization."

Such amounts may be deducted in computing the income of the taxpayer for a taxation year.

Purpose

"This amendment is designed to offset the effect of the judgment of the Exchequer Court of Canada in *Griffith v M.N.R.*, (1956) C.T.C. 47, in which the Court held that a professional person cannot legally deduct the expenses of attending conventions pertaining to his profession because such expenses are not paid or incurred for the purpose of earning income. For the year 1955 and subsequent taxation years individuals carrying on a business or profession are permitted to deduct the cost of attending not more than two conventions held anywhere in the world during the year by a business or professional organization."

Effect

"'Business' is defined by Section 139 (1) (e) to include 'a profession, calling, trade, manufacture or undertaking of any kind whatsoever and includes an adventure in the nature of trade but does not include an office or employment'. From this definition it is clear that convention expenses cannot be deducted from salary income. However, from the explanation of the Minister of Finance, Hansard, July 31, 1956, a business includes farmers who belong to a farm organization."

"According to the strict wording of this paragraph, the taxpayer who claims the deduction must himself attend the convention in respect of which the expenses were incurred. This means that a person carrying

on a business or profession through a partnership cannot legally deduct the expenses of a partner attending a convention as an expense of the partnership business since the partnership as such is not a taxpayer. Cf. *Parkinson v. M.N.R.*, 5 Tax A.B.C. 8.

"The number of conventions is limited to two per year *but they may be held anywhere in the world.*

"The amount deductible is subject to the qualification in Section 12 (2) that it is reasonable in the circumstances."

The XIIIth Congress of The F.D.I.

From September 7 to 14, 1957, the twelfth Congress of the International Dental Federation will be held in Rome.

RESERVATIONS:

For all members contemplating attending the Congress it is emphasized that reservations must be made early. Reservations are now held for members of the Canadian Dental Association but *it will become necessary early in the new year to state definitely the number of reservations required.* Thos. Cook & Son are officially appointed to look after travel arrangements and reservations for C.D.A. members. All enquiries should be addressed to Thos. Cook & Son, 94 Adelaide Street W., Toronto, or a local office of this firm in your locality.

PROGRAMME:

Arrangements are now well advanced. The scientific session will be held in the Palace of Congresses with simultaneous translations in five official languages. There will be an exhibition of Oral Hygiene and Social Dentistry under the patronage of the High Commissioner for Public Health remaining open September 7th to 30th. It will be housed in another building close to the Palace of Congresses, and will comprise sections on matters such as the provision of dentistry for schools, industry, insurance groups, and communities; the provision of educational material; statistical evidence of

oral ill-health, and the measures taken against it in various countries; and a display of "Dental Care Material". In view of the increasing and world-wide interest now being taken in prophylactic measures, this exhibition will doubtless prove very popular.

There will also be a scientific exhibition showing the development of dental science, the methods of organizing the provision of its various branches today, and collections of books on loan from various universities and schools. This exhibition will be divided into three sections: (a) Historical; (b) Current Educational Material; (c) Bibliographical.

Particular attention has been given to the organization of a trade exhibition, which will be representative of the more important manufacturers throughout the world. For the clinician who so often finds deficiencies in the design of the complicated apparatus which is used today, this exhibition should prove of considerable interest, enabling him to observe the manner in which different countries approach the question of design.

Rome will have many other attractions for those who are visiting the Congress. The Organizing Committee has made arrangements for imaginative events, such as a Cocktail Party to be held in Michaelangelo's superb cloisters of the Baths of Diocletian, a visit to an open-air opera, and an open-air concert; a drama in the Theatre of Imperial Rome; and, in addition to a Congress Ball, a Congress Dinner and an F.D.I. Dinner. After this, the announcement of a golf tournament seems somewhat pedestrian.

His Holiness, the Pope, has graciously announced that he will receive Congress members in public audience in the Vatican, and the Lord Mayor of Rome will give a reception.

1956 Journal Issues in Short Supply

Owing to the extremely heavy demand for extra copies of the Journal all 1956 issues to date are in extremely short supply. Copies no longer desired could be put to very good use at this office.

Municipalities which have Fluoridated Water Supply as of October 1956

Municipality	Date when Started		Population
Newfoundland none			
Prince Edward Island none			
Nova Scotia			
Halifax	11 June	1956	100,000
Dartmouth	3 July	1956	30,000
Kentville	16 February	1956	5,000
New Brunswick none			
Quebec			
Point Claire	3 February	1955	10,800
Sillery	19 October	1955	13,800
Ontario			
Brantford	20 June	1945	45,000
Brockville	18 February	1956	15,000
Fort Erie	18 January	1952	8,500
Thorold	12 February	1952	7,500
Sudbury	29 August	1952	60,000
Deep River	9 December	1952	3,000
Oshawa	26 February	1953	42,000
Tisdale Township	3 October	1955	8,000
Manitoba			
Brandon	8 March	1955	23,000
Saskatchewan			
Assiniboia	May	1953	2,500
Moose Jaw	December	1952	27,500
Saskatoon	July	1955	57,500
Swift Current	October	1954	7,500
Weyburn	March	1955	7,148
Wynyard	August	1956	1,326
Alberta none			
British Columbia			
Smithers	21 June	1955	1,700
Prince George	13 September	1955	12,500
Kelowna	15 September	1956	8,500

Comment on Fluoridation

Only those municipalities where official announcement has been made are included in the list given above. Arising from this survey comment can be made respecting the situation in certain provinces.

NEW BRUNSWICK:

On October 15th a referendum on fluoridation was held in St. John (pop. 51,000). The vote result was 3,000 for and 2,000

against. However it is doubtful if fluoridation can be started until the New Brunswick Health Act is amended by the legislature. Over a year ago an *ex parte* application was made by certain ratepayers before the N.B. Supreme Court against a resolution passed by the City Council of Fredericton in favour of fluoridation of the water supply and it would appear that the introduction of fluoridation will be delayed in the entire province until some action is taken by the legislature. The Supreme Court did not rule on the merits of fluoridation but on a legal technicality respecting the wording of the N.B. Health Act.

ONTARIO:

Action has been forestalled owing to a Supreme Court decision on a legal technicality in the wording of the Public Health Act in respect to the case of Metropolitan Toronto versus Forest Hill Village. Owing to this decision two municipalities (Toronto Township and Renfrew) have ceased to fluoridate and others are awaiting clarification of the position. Effort is being made to have suitable amendment made to the Act at the forthcoming session of the legislature.

MANITOBA:

Greater Winnipeg (pop. 399,000) started fluoridation on December 1st.

SASKATCHEWAN:

A plebiscite will be taken on fluoridation at Battleford on October 30th.

ALBERTA:

In accordance with legislation adopted last year no fluoridation is possible until after October 1st, 1956 and then by plebiscite only. Plebiscites are contemplated in several municipalities.

Gordon V. Allen Appointed Publisher

Mr. Gordon V. Allen has been engaged as Publishing Agent for the Journal of the Canadian Dental Association. Mr. Allen has had some 20 years experience in the publishing business and will have control of the publishing operations of the Journal. An office for this purpose has been established under the name of Gordon V. Allen Publications, 15 Toronto Street, Suite 12, Toronto, Ontario. All advertising for the Journal will be handled through that office.

TENTH TRIENNIAL PACIFIC COAST DENTAL CONFERENCE

SAN DIEGO, CALIFORNIA — AUGUST 19-22, 1957

- Some of Nation's Foremost Clinicians
- Scientific Sessions in Mornings Only
- Afternoon Entertainment — Trips to San Diego Zoo, Tijuana, Boat Excursions of San Diego Bay, Aquatic Sports, From Fishing to Water Skiing, Ride in Glass Elevator of the El Cortez Hotel.

CONFERENCE OPEN TO CANADIANS

Address inquiries to:

Dr. C. W. Gilman, Secretary, 219 East 8th Street, National City, California, U.S.A.

Committees and Councils

Auxiliary Services

In 1955, this Committee reported the efforts of certain groups of dental mechanics in three provinces, British Columbia, Manitoba and New Brunswick, to obtain the right to deal directly with the public for denture services. These efforts have been continued and extended during the past year in all three provinces.

In December, 1955, the B.C. Government named a committee to study the problem of profession-laboratory relations but, up to the present, this report has not been released.

In Manitoba, both the profession and the illegal labs presented Private Bills to the Legislature, each asking for legislation favorable to their causes but neither Bill was successful. A committee, set up by the Government to examine the report on the situation this year, could not reach agreement and neither Bill was introduced. The Association's presentation was weakened this year by the fact that the ethical laboratories, previously aligned with the profession against the illegal labs, withdrew their support for the professional Bill.

In both provinces, the illegal laboratories are quoting the Alberta situation, under provisions of the Health Act, as a desirable model for an establishment in their respective provinces. The Manitoba Association, however, proposed a prosthetic clinic, manned by dentists on a voluntary basis, to supply denture service at lower than a private professional fee.

In New Brunswick, the situation is somewhat obscure in that technicians proposed a Private Bill requesting the right to supply services to the public and a separate Bill removing the authority from the New Brunswick Act to restrain by injunction anything done in contravention of the 1953 Act. Both Bills were re-

ferred to the Corporation Committee of the Legislature and the provincial Society appealed for assistance to Dr. Gullett following this presentation. The Committee reported unfavorably on both Bills. There are indications that the ethical laboratories in New Brunswick are organizing for their own protection.

An anomalous situation occurs in Ontario and Quebec, in both of which provinces technicians are incorporated. In Ontario, they assist the provincial Board very materially in controlling illegal practice, while in Quebec, from reports, they do not co-operate. The reason for this difference in attitude is not clear. The Quebec Board is considering the desirability of establishing an accreditation plan similar to those in effect in several States where, in the opinion of the American Dental Association, they assist materially in the control of illegal practice by labs. Alberta is also proceeding with an accreditation plan.

For the first time, it appears that Nova Scotia may have a problem in controlling illegal practice by laboratories, the provincial Board having applied for amendments to the Dental Practices Act, asking for a prescription clause and the possession of dental equipment in improper locations an offense. Apparently the ethical laboratories opposed these proposals.

This Committee has recommended closer co-operation between the provinces and better liaison with the ethical laboratories for mutual benefits. It recommends, too, better public relations by giving the patient full explanation of mouth conditions when dentures are being inserted.

This Committee questions the advisability of any provincial Board seeking control legislation through Private Bills; such appeals made in this manner are liable to backfire to the detriment of the

profession. If amendments or changes in professional Acts are necessary and Government will not agree to present them as Government Bills, the Committee be-

lieves it would be wise to leave the matter in abeyance for a more favorable time.

R. A. Rooney,
Chairman.

The Corps

On the first of October, four officers of the Corps proceeded on leave pending retirement. They are: Colonel F. R. Drewry, E.D., C.D., Lt.-Col. P. R. LaSalle, C.D., Major G. A. Barber, C.D., and Major C. L. Johnston, C.D.

Colonel Drewry graduated from the University of Toronto in 1918 and practised in Cobourg, Ontario. At the outbreak of the Second World War he was commanding officer of the 22nd Medium Battery R.C.A., N.P.A.M. He transferred to the C.D.C. and proceeded overseas in June 1940. He was Command Dental Officer (R.C.A.F.) United Kingdom throughout his overseas service and returned to Canada on appointment as C.D.O. Western Air Command in December 1942. In June 1949 he took command of No. 13 Coy. R.C.D.C. at Trenton and was appointed a Deputy Director of Dental Services at A.H.Q. in March 1951. Colonel Drewry will live in Cobourg, Ontario.

Lt.-Col. LaSalle graduated from the University of Montreal in 1925. He was commissioned in the C.D.C. in October 1939 and served in Canada and the United Kingdom. After a tour of duty as an Assistant Director of Dental Services at Ottawa he was promoted to the rank of Lt.-Col. and appointed Commanding Officer of No. 15 Coy. R.C.D.C., Montreal. Colonel LaSalle will continue to reside in Montreal.

Major Barber is a graduate of McGill University of 1930. He was commissioned in the C.D.C. in August 1941 and has served continuously in Canada since that time. Major Barber will reside in Montreal.

Major Johnston graduated from Toronto University in 1931. He was commissioned in the C.D.C. in February 1941 and proceeded overseas in 1942. He saw service in the United Kingdom, Italy and Northwest Europe, returning to Canada in October 1945. Since that time he has served in Ontario and in Western Canada. Major Johnston will continue to make his home in Toronto.

All these officers will be employed by the Corps in a civilian capacity and we wish them many happy and healthy years of service.

Lt.-Col. T. L. Marsh and Lt.-Col. E. C. Purdy of the Directorate of Dental Services

attended the Fall Meeting of the Montreal Dental Club on October 16-19. Their contribution to the meeting was an R.C.D.C. pictorial exhibit entitled "Ten Years of Progress" which concerned the enhanced career possibilities for dental officers at the present time in comparison with ten years ago.

The Royal Canadian Dental Corps Association held its annual meeting at the Chateau Laurier, Ottawa, on November 1 to 3. The meeting was under the chairmanship of Colonel H. R. McLaren, Ottawa. The R.C.D.C. was represented by Brigadier E. M. Wansbrough and Colonel K. M. Baird. At the mess dinner held during the meeting, Brigadier Wansbrough presented the Moore Trophy to Lt.-Col. C. E. Woods, C.O. No. 54 Dental Unit, Ottawa. Colonel H. R. McLaren presented the Trelford Trophy to Lt.-Col. F. C. Fennell, C.O. No. 50 Dental Unit, Halifax and Colonel J. P. Whyte presented the Saskatchewan Dental Association Memorial Trophy to Lt.-Col. D. T. Wilson, C.O. No. 51 Dental Unit, Saint John, N.B.

Lt.-Col. J. E. Merritt, Halifax, was chosen as the new President of the Association.

The promotion of Captain R. J. K. Pyne to the rank of Major has been announced. Major Pyne was born at Coaticook, Que., in 1919. He served as a Major in the Royal Canadian Artillery in the United Kingdom, Italy and Northwest Europe and was awarded the Military Cross. On graduation from McGill University in 1951 he was appointed to the R.C.D.C. Major Pyne is at present serving with the R.C.A.F. in France. He is married and has three children.

Dr. W. A. Sugars has been appointed to the R.C.D.C. in the rank of Captain. Captain Sugars graduated from McGill University in 1937 and served five years with the Corps during the Second World War. Since the war he has practised in Magog, Que. Capt. Sugars is employed at Parent, Quebec.

The following officers have been released from the Corps:

Captain G. J. LaHaye

Captain F. Messier

Captain J. B. Meunier

Captain E. F. Shaunessy

Economic Security

Your Home

PART 3

SOME QUESTIONS AND ANSWERS

By E. L. R. WILLIAMSON, M.B.E., B.P.A., F.R.Econ.S.

Many questions will arise in the minds of a family contemplating the purchase of a house to make their home. Some of the questions will relate to special problems of the particular family, but many can be envisaged:

Q: When should I buy?

A: At the earliest possible stage of your career. When you have selected a place of practice which will be maintained for at least a few years, and income can be predicted within reasonable limits.

The only priority over your home—apart from day to day expenses—should be your insurance: disability income, hospitalization, and family income in event of your decease; and a “life raft” of cash on hand of at least one to two thousand dollars to meet otherwise unprovided for emergencies. Savings insurance (pension and endowment) should follow after home purchase, and other forms of saving after savings insurance.

Q: How much should I pay?

A: A useful yardstick to apply to purchase price is the equivalent of twice annual personal income. In circumstances where an increase of income safely may be predicted for the immediate future, it may be permissible to increase the value to two and one half times income. It appears unwise ever to contemplate expenditure greater than three times annual income.

It will be appreciated that this ‘rule of thumb’ applies reasonably to all situations since lower income localities will

have lower-priced real estate, and higher income localities, higher prices. Assuming a down payment of approximately twenty-five per cent of the purchase price, discharge of the balance over a twenty-year period, principal and interest, should cost less in monthly outlay than rent for less desirable accommodation.

Q: Should I have a mortgage?

A: It is doubtful whether more than five to ten per cent of all privately-owned homes would be so owned if mortgage facilities did not exist. You should buy on mortgage; it enables you to start the purchase of your home years earlier, and it is better to be paying six per cent on a mortgage of your own than to have it included in the rent to pay on the landlord’s mortgage.

It is important, however, to ensure that the mortgage contains provision for you to make additional payments on principal at any time, thus reducing regular payments. It is desirable that you be permitted to make these payments without additional interest or penalty; it is essential that any such additional charges not be heavy. The mortgage also should provide for the right of your widow to pay off in full in the event of your decease. You should at the same time make provision through insurance to meet this contingency. (See “Mortgage Protection” article in the September, 1954 “Journal”).

Be sure to employ a competent solicitor to ensure that all matters affect-

ing your interests in the mortgage are fully protected. Finally, be sure that you hold disability income insurance to carry the payments in the event of your disability from sickness or accident. (See "Causes and Duration of Disability", Oct. & Nov. 1955 "Journals").

Q: Where should I buy?

A: Location is to a large degree determined by the personal tastes of the family, but sight should not be lost of several other points: An established area with conservative growth ahead is best. It is most important that your home be protected from deterioration of livability and value through industrial building invasion or other undesirable developments. Examination of zoning regulations existing and projected is most important. Boom developments should be considered with the greatest caution: they are likely

to be over-crowded, and are subject to decline in unison throughout the whole area.

Above all, remember that your home is your most important investment. Do not act without careful consideration and do not submit to pressure.

Q: Should I buy ready-built or build myself?

A: Much depends upon the circumstances and what is available. It usually costs somewhat more to build for yourself — if you do it well — but it gives an opportunity to design the house to meet personal tastes and circumstances, and you will usually have a better-built house.

Further questions will be considered next month. Readers are invited to submit any questions concerning home ownership (or any other topic) that they would like to see discussed in this department.

Did you ever consider what a friend means by the phrase, "Merry Christmas"?

Merry Christmas! What a cheery greeting it is. It brings the full warmth of friendly regard. Forget your troubles, be joyful. There is lots of fun and goodness in life, especially at Christmas. That is what the fine old greeting means.

When anyone wishes me a Merry Christmas, it always does me good, for I recall that the Bible says, "a merry heart doeth good like a medicine."

So the greeting, "Merry Christmas", is really wishing you happiness, good health, and much joy.

Norman Vincent Peale

The Provinces

Quebec

A heavy early morning fog on Wednesday, October 17, 1956, dissipated slightly as dentists from near and far congregated on the ninth floor of the Sheraton-Mount Royal Hotel to register for the Thirty-Second Annual Fall Clinic of the **Montreal Dental Club**. As in the past it was a very well attended clinic.

The three days of clinics, essays, speeches, and exhibits began at nine-thirty in the morning as able clinicians embarked on a discussion of many branches of dentistry. Dr. Bernard Rauch from Montreal discussed the problems encountered by the General Practitioner in Practice. Dr. Antoine Raymond from Montreal dealt with the surgical corrections of different types of prognathism cases. Drs. D. A. Townsend and D. C. Chaloner from Montreal presented their ideas on the use of naturally fluoridated bone meal in the prevention of decay. Drs. Eric P. Millar and Akira Kimura from Montreal handled the treatment of fractured and traumatized anterior teeth in children. Drs. A. Schutz and L. Kent Jr. from Montreal discussed high speed cavity preparation. Dr. Guy LeFrançois from Montreal illustrated the preparation of the stump for Jacket Crowns. Drs. Walter Kowal and Wm. Sanders dealt with the practical uses of dental cements. Drs. Wm. Orr Mulligan from St. John, N.B., spoke on mixed dentition Orthodontics. Lt. Col. T. L. Marsh, D.D.S., and Major E. C. Purdy, D.D.S., from Ottawa, gave a talk on the first ten years of progress in R.C.D.C. Dr. Lorne E. MacLachlan from Ottawa illustrated Oral Photography Simplified. Dr. R. T. Lamb from Montreal displayed the art of Making That—Inlay Fit.

By noon clinicians and delegates alike circulated among the exhibitors' booths where new equipment, materials, techniques, and products were introduced. For the next three days exhibitors and salesmen were kept busy satisfying queries put before them by the dentists, and a great deal of credit is due to them for the way in which they so adequately exhibited the fruits of continual research to benefit all aspects of dentistry.

Following the luncheon Dr. Don W. Gullet Secretary of the Canadian Dental Association, speaking very convincingly, reminded or introduced to those present the challenges which face dentists and the profession of dentistry here in Canada.

At 3:00 p.m. Martin R. Protell, B.S., D.D.S., of New York spoke on the "Practical Psychodynamics for Patients Needing Extensive Dental Treatment," in which he

evaluated the psychological factors inherent in the dental situation, considered the use of medications in pre-, co-, and post-operative phases and discussed the simplification of operative techniques on the so-called 'difficult' patient.

Following Dr. Protell's essay, Harry M. Slater, M.D., F.A.C.A., of Montreal, presented an essay—"The Use of Trifluorethyl Vinyl Ether (Fluoromar) in Anaesthesia for Dentistry"—dealing with advantages to be derived from the use of this anaesthetic in those cases requiring the use of a general anaesthetic in the office of a general practitioner.

From 7:00 to 8:30 p.m., The Montreal Dental Nurses and Assistants Association held a reception to which all registered Doctors, their wives and Nurses were cordially invited. It was a very well attended and successful reception.

Thursday morning saw a continuation of registration and a resumption of the convention activities. At 9:30, following a half hour period of visual education, Edward J. Tabah, B.Sc., M.D., C.M., F.A.C.S., F.R.C.S., (C), Assistant Surgeon of the Royal Victoria Hospital in Montreal, gave an interesting illustrated essay on "The Early Recognition and Diagnosis of Cancer of the Oral Cavity," in which he stressed the increasing importance of the role of the dental practitioner in recognizing those diseases of the oral cavity which might indicate the presence of cancerous lesions and the necessity of early diagnosis and co-operative treatment planning.

During the remaining two days, registered clinics by outstanding men in their field were given twice daily in private rooms and arranged so that it was possible for all delegates to take advantage of those clinics in which they were particularly interested. Drexell Allen Boyd, D.D.S., F.A.C.D., of Indianapolis, Ind., elucidated on "High Speed Equipment and Its Use in Cavity Preparation," in which he covered the various types of high speed instruments, and the cutting efficiency of carbides and diamonds in cavity preparations.

W. H. Boyles, D.D.S., of Montreal, discussed the use of "Reversible Hydrocolloids in Crown and Bridge Work," presenting a review of the physical properties and behavior of the hydrocolloids and stressing the importance of gingival retraction in this technique.

Milton H. Brown, D.D.S., Capt. Dental Corps, USN, gave "A Critical Analysis of Partial Denture Problems," in which the importance of diagnosis and treatment planning in all cases requiring partial denture

prosthesis was presented, causes of partial denture failure discussed and mouth preparation design and patient education were considered.

Eugene J. Hickey, D.D.S., Syracuse, N.Y., delivered a clinic on "Oral Surgery for the General Practitioner," in which he passed on many helpful hints in the management of oral surgical problems.

William James Updegrave, D.D.S., F.A.C.D., F.A.A.O.R., of Philadelphia, Pa. spoke on the "Current Developments in Dental Radiography," in which he showed how to obtain better radiographs by presenting a comparison of the conventional intraoral technique with the increased distance technique; by discussing the pros and cons of fast emulsion films and by comparing films produced at 50-70 and 90 kilovolts, and reporting also on investigations of developing solutions.

James Patrick McGuigan, D.D.S., F.I.C.D., of Halifax, N.S., discussed "The Role of Calcium Hydroxide in Paedodontic Practice," in which he considered the use of calcium hydroxide as a pulp capping, as a lining and its use in pulpotomies of carious deciduous teeth in order to maintain the integrity of the dental arch.

Following the Thursday luncheon Mr. Arnold Heckle, United Kingdom Trade Commissioner, spoke to the delegates.

The balance of the afternoon was filled by the registered clinics and the exhibits.

The social highlight of the three-day fall clinic took place on Thursday evening, the event being a well attended supper dance. Continuous dancing music from 9:00 p.m. to 1:00 a.m. was very ably supplied by Paul Beauregard and his Orchestra and the Buffet Supper more than satisfied even the most discriminating gourmet.

Friday, the final day of the convention, began with the showing of a series of films entitled "Jaw Injuries in the Field," "Patient Education for Better Oral Health," and "Benign Lesions of the Oral Cavity." These films were presented through the courtesy of the Canadian Army Film Library, Quebec Command, R.C.D.C., and were obtained through the efforts of Lt. Col. D. W. Henry, R.C.D.C. (M). The balance of the A.M. and P.M. was once more taken up by registered clinics and exhibits.

The wives and Nurses of many of the dental delegates were present at the final luncheon on Friday, and as all were relaxing over coffee and cigarettes entertainment was provided.

With the final registered clinics in the afternoon, the Thirty-Second Annual Fall Clinic of The Montreal Dental Club drew to a close and as the delegates left the hotel they took with them a feeling of being better equipped to cope with the everyday

problems which they face in their practice.

To the General Chairman, Dr. D. B. Ward, and his Committees who were responsible for the flawless success of this convention, we extend our most sincere appreciation and congratulations.

W. D. S.

An all day clinical meeting of **The Mount Royal Dental Society** was held at the Mount Royal Hotel on Friday, Oct. 5th, 1956. The meeting was called to order at 10.15 a.m.

The speaker for the morning was introduced by Dr. J. Rauch who informed us that Dr. Elliott Siegal of Toronto was a graduate in Medicine from the University of Toronto class of 1944, and a graduate of Dentistry from Harvard and has been practicing Oral Surgery in Toronto since 1953.

Dr. Siegal stated that he hopes for us to develop our analytical faculties in our treatment and that we should depend on an accurate diagnosis based on a thorough understanding of the Pathology and Bacteriology of the lesion. He discussed in detail the use of the various antibiotics in Oral Surgery, but pointed out that our first thought in treating dento-alveolar infection should be of surgery and secondly of the use of antibiotics.

He then discussed haemorrhage, its cause and treatment. The lecture was well illustrated with kodachrome slides and Dr. Siegal was thanked for his excellent presentation by Dr. R. M. Wiener.

Dr. J. Rauch introduced our speaker for the afternoon, Dr. M. Rockman, Assistant Professor of the Department of Radiodontics, Faculty of Dentistry, University of Toronto.

Dr. Rockman first discussed the problems in radiographing the child patient and advised the use of the small series O film and of having the child's parent assist the dentist in holding the film in place. He discussed the use of film holders and changes in angulation and exposure time for children.

Dr. Rockman was thanked by Dr. S. Hershon.

D. S.

Shortly after noon on Wednesday, September 26 at the Rosemere Golf and Country Club near Montreal, the Annual Fall Golf Tournament of the **Montreal Dental Club** got underway. Beneath a warm afternoon sun, which highlighted the brilliant fall colours, the golfers teed-off in keen competition.

After 18 holes, score cards showed that Drs. Arnold Mitchell and A. J. Schutz were tied for the low gross. A flip of a coin and Dr. Mitchell emerged victorious. The first

low net was won by Dr. W. Swiston and the second low net by Dr. Gordon Crutchfield.

Following the evening dinner Dr. Arnold Mitchell was presented with a silver plated cigar box, a lighter and a box of cigars by sports-minded members in recognition of thirty years of service with the Montreal Dental Club in connection with sports activities. In response Dr. Mitchell stated that he was pleased to see the club members taking such keen interest in sports, particularly golf, claiming there was no better way of bringing together club members.

W. D. S.

The first regular meeting of **The Mount Royal Dental Society** was held on September 18th at the Mount Royal Hotel. The meeting was called to order at 8.45 p.m. by the president, Dr. M. Lang. Dr. A. Bazerman introduced the guest speaker of the evening, Mr. Bernard Roll, C.A., whose subject was "Taxation and Record Keeping for the Professional Man."

Mr. Roll pointed out that we in Canada are fortunate to have a system of voluntary reporting of tax information. The minimum requirements for proper record-keeping are as follows: An appointment book, a deposit book with details of individual receipts, a record of all expense items preferably paid by cheque. Reported expenses should be categorized such as: rent, taxes, office supplies, nurse, insurance, printing and stationery, telephone, electricity and donations to various philanthropies.

The speaker also brought to our attention that we are now allowed to deduct the expenses of two conventions annually—conventions held in any part of the world.

Certain things are not deductible, such as personal or living expenses and automobile expenses, etc. Expenses for capital equipment must be depreciated a certain percent annually. Most realty transactions are taxable but stock market dealings are not. There is a limitation of four years for re-assessment of taxation returns, except in the case of fraud or misrepresentation. Tax records should therefore be kept for ten years.

Appreciation for Mr. Roll's interesting address was voiced by Dr. David Solomon who responded for the Society.

A short business meeting followed during which the following members were nominated for election to the board of The College of Dental Surgeons of the Province of Quebec: Dr. G. Zimmerman, Dr. R. Weiner and Dr. C. Finkelstein.

The meeting was adjourned after good and welfare.

D.S.

British Columbia

Dr. Hamilton E. Simmons of Vancouver has been named Chief of Dental Service at Shaughnessy Hospital.

Harrison Hot Springs Hotel was the locale for the **Northwest Conference on Dentistry for Children** at the end of September, sponsored by the Washington, Oregon, Montana and Idaho units of the American Society of Dentistry for Children. Eleven B.C. men interested in paedodontics attended as guests and Dr. Maury Massler, the guest clinician, talked on research now being done and some of the results that have accrued therefrom.

The **Fraser Valley Dental Society** was addressed at its monthly meeting held in the Royal Hotel, Chilliwack, on October 11, by Dr. Charles Craig of Vancouver. His subject was "Treatment of Simple Orthodontic Problems."

The annual fall golf tournament of the **Vancouver and District Dental Society** took place at the Vancouver Golf Club on October 4. For the first time the meet was held on standard time, and some of the four-somes finished in the dark, but nobody seemed to mind.

On Thursdays the weather is always fine; seventy-six played golf and sixty-two stayed for dinner.

The winners were: low gross—Dr. T. G. Booth, 79; second low gross—Dr. M. Waterman, 80; third low gross—Gerry Splatt, 81 (visitor's prize); fourth low gross—Dr. T. McCusker, 83; first low net—Dr. L. R. McBride, 66; second low net—Dr. W. Julien, 67; third low net—Dr. C. A. Stark, 67; fourth low net—Dr. A. Kanee, 68. The long drive was hit by Dr. R. A. Mitchell and closest to the pin was Dr. J. Naimark.

Everybody in attendance won a prize through the courtesy of the three dental supply companies and the B. C. Dental Laboratory Association, each of whom donated a dozen golf balls.

After dinner Mr. Rick Foote of the Westminster Paper Mills played the piano and told some good stories. The new Executive Secretary, Dr. Ross Upton, who was also present, proved to be a fine raconteur.

The golf convener, Dr. Dick Butler, expressed his thanks to all those who made the meet such a success.

The regular monthly meeting of the **Victoria and District Dental Society** was

held on October 15 in the Empress Hotel.

Dr. W. R. Loudon introduced the guest speaker, Dr. Gordon H. Grant, well-known Victoria surgeon. Dr. Grant discussed problems mutual to dentistry and medicine. Mention was made of the increased co-operation between these professions and the desirability of even further co-operation in view of the present trend everywhere toward socialization of the health services. Dr. Alec Gunning expressed the thanks of the society at the conclusion of the meeting.

D. H. M.

New Brunswick

On Monday, October 15th, the citizens of Saint John went to the polls to elect a new city council. There were on the ballot three plebiscites the last of which was on fluoridation. It was worded as follows: "Are you in favour of adding fluorine to the city of Saint John water supply." The final count of the votes was 3107 saying yes and 2751 no. At present until legislation is enacted in the New Brunswick parliament the department of health cannot allow fluorine to be added to any water. The present act states that chemicals may be added to the water supply but a supreme court decision stated that in their opinion it was meant to be only for purification of water. Until this act is amended all fluoridation of water in New Brunswick is held in abeyance.

J. F. E.

The following societies have elected officers for the 1956-1957 season.

North Shore Dental Society: President, Dr. J. D. Vautour; Vice President, Dr. Jos. Levesque; Secretary Treasurer, Dr. L. A. Gaudet.

Moncton Dental Society: President, Dr. L. W. Walker; Vice President and Secretary Treasurer, Dr. S. C. Geddes.

Fredericton Dental Society: President, Dr. J. C. S. McMullen; Vice-President, Dr. D. T. Wilson; Secretary Treasurer, Dr. F. B. Gibson.

Saint John Dental Society: President, Dr. E. D. Halford; Vice President, Dr. L. F. Ramsay, Secretary, Dr. A. Steuermann; Treasurer, Dr. J. D. Blackmer.

Upper Saint John Valley Dental Society: President, Dr. Yvon Long; Vice President, Dr. B. A. Cyr; Secretary Treasurer, Dr. E. St. Onge.

Nova Scotia

Dr. K. M. Johnson, Winnipeg, president of the Canadian Dental Association, and Dr. D. W. Gullett, secretary of C.D.A., were guests recently at a dinner meeting of the

Nova Scotia Dental Association, in the Nova Scotian Hotel.

Dr. D. C. Eaton, Halifax, presided at the session attended by 60 dentists from all parts of the province.

In addressing the meeting, Dr. Johnson dealt in particular with the accomplishments of the Canadian Dental Association during the past year. He stressed the value of fluoridation of public water supplies as a preventive measure against tooth decay.

Dr. Johnson congratulated the local association for their part in promoting this valuable health measure.

Dr. Gullett spoke principally on various aspects of health insurance as applied to dentistry. He also emphasized the need for increased teaching facilities in universities across Canada.

Dr. Gullett said he was pleased to note the expansion program currently under way at Dalhousie University.

Alberta

Dr. K. A. Burnham, chairman of Alberta's Dental Health Week programme, received a briefcase from the **Alberta Dental Association**, in recognition of his work during the last two years. President Dr. Arnold Lane, of the Edmonton group, made the presentation at a meeting of the Edmonton and District Dental Society. Col. Shillington, president of the Western Command Dental Corps, addressed the society on a technical topic, the treatment and planning for partial dentures.

A meeting of the **Lethbridge and District Dental Society** was held on October 1st at the Marquis Hotel in Lethbridge, with twenty members present.

The following were elected to office: Dr. Bert Redding, President; Dr. Wayne Matkin, Vice-President; Dr. Van Christou, Secretary.

Dr. Arthur Aherns was presented with an engraved silver tray as an award for many years of service on the board of the Alberta Dental Association.

V. E. C.

Ontario

The **United Appeal of Metropolitan Toronto**, the first occasion in Canada when such a project was undertaken, was an outstanding success. The entire quota of over \$7,000,000 was exceeded.

Last year the combined givings of the members of the dental profession in the area totalled approximately \$15,000.00. An 85 per cent increase this year resulted

from the United Appeal approach as a sum, slightly in excess of \$28,000.00 from the dentists in the Toronto area was realized. This amount exceeded the quota of the profession by \$8,000.00.

Dentistry was the first major profession to so exceed the goal.

The dental profession's campaign occurred under the able direction of Co-chairmen Mr. William Murchie, and Dr. Ernest Rollaston. The following served as Vice-Chairmen: Drs. Vernon Fisk, Peter Beck, Lloyd Grose, Charles Williams, Fred Pearson, Jim Smith, Russel Sparling, Harry Potashin, Jack Trelford, and Cameron Adams.

The dentists of Metropolitan Toronto deserve great credit for this tangible expression of community responsibility.

The following is an excerpt from the recent **Faculty of Dentistry** staff letter issued from the office of the Dean:

The long struggle for a new dental building will be brought to a successful conclusion within the foreseeable future. Throughout this period of endeavor, Faculty efforts have been directed toward obtaining a building that will be a credit to dental education and the dental profession.

Without some knowledge of the very complex circumstances which have beset these efforts, it is difficult fully to appreciate how fortunate we are in the prospects that now confront us regarding the building.

For example, as recently as February, 1954, we were told that limited funds were to be made available for the restoration of the existing building at 230 College Street, and for the provision of an addition to it. At that time the staff, supported strongly by the Board of the Royal College of Dental Surgeons, the Ontario Dental Association and the Dental Alumni Association, took a positive stand against this course of action on the grounds that it would only perpetuate the inadequacies of the present facilities. By the end of 1954 our proposal for an entirely new building in the neighborhood of the teaching hospitals, as recommended in a report prepared for the Board of the Royal College of Dental Surgeons in 1944, was accepted.

By February, 1955, press releases in the Toronto papers indicated that a new dental building was to be erected on land adjacent to and south of the new Hospital for Sick Children and one short block east of University Avenue. While this location was a block east of the site recommended in the report to the Board of the Royal College of Dental Surgeons, it was recognized that the cost of the University Avenue site, suggested previously, was now economically unsound in

relation to the total cost of the project. The actual position of the new building is near the Toronto General Hospital, the Hospital for Sick Children and Mount Sinai Hospital.

To pursue a course in keeping with our responsibilities among the health professions, hospital association is of vital importance. It is a fortunate circumstance that such close proximity to the three large hospitals has been made possible.

The Building Committee is cognizant of the many factors that come into focus when a project of this size is under consideration. It believes that the Faculty objectives are about to become a reality. We intend to concentrate on a highly trained and competent staff, dedicated to give the best dental health service to the public through the training of future dentists and auxiliary personnel, and on the provision of the most up-to-date facilities, equipment and services to do this most efficiently.

Present indications are that plans will be completed by mid-year 1957; tenders will be called for immediately thereafter, and building operations will begin by the late summer of 1957. If this schedule is followed, the building may be ready for occupancy early in 1959.

At the annual dinner meeting of the **Academy of Dentistry of Toronto** held in the Royal York Hotel on Monday, October 22, 1956, president Dr. Harvey Milburn announced that this meeting showed a record five hundred registered members.

Civic pleasantries were proffered by Mayor Nathan Phillips.

It was announced that last year's course of lectures given to the Ontario Dental Nurses and Assistants' Association, sponsored by the Academy, was a splendid success. Further, it was stated that this year's planned course of some twenty, two hour lectures, beginning on Wednesday, October 29th, was expected to be even more worthwhile and was open to all who assist in dental offices.

Highlights of the projected Academy meetings for the coming year were mentioned.

The Academy members were told about the Dental Workshop-Conference to be held at the Royal York Hotel on February 21, 1956, under the sponsorship of the Academy of Dentistry in association with the Department of Public Health, Toronto. The workshop will be under the direction of F. H. Compton, D.D.S., D.D.P.H., director of dental services for the city of Toronto.

Three gracious ladies, special guests at the Annual Dinner were presented to the members. These were Mrs. J. M. Cation, President of the Ladies' Auxiliary to the Academy of Dentistry, Mrs. Gladys Coch-

rane, President of the Toronto Affiliated Association Ontario Dental Nurses' and Assistants' Association, and Miss Mary Graham, President of the Dental Nurses' Alumnae Association of Canada.

Dean Ellis brought greetings from the Dental Faculty and also extended the U. of T. best wishes for Dr. Sidney Smith. Dr. Ellis gave the members the latest facts pertaining to the long anticipated new Dental Building for the U. of T. These were in effect that as a result of complex efforts the struggle would reach fruition in the foreseeable future. The building will be closely associated with Toronto's three largest hospitals and will cost over five million dollars. It is anticipated that construction will begin in 1957 and that occupancy will take place some time in 1959.

Mr. Donald Fleming remarked during his dinner address that Canada needed more dentists and more training facilities. The facilities as they stand, said Mr. Fleming, are not equipped to accept the number of applicants received and that combined, the five Canadian colleges could accept only two hundred applicants. This he stated would not even meet the current vacancies. Although this was not news to the assembly, it was at least rewarding to know that men in the political arena were aware of these conditions. The remainder of the address was devoted to discussing the professional man as a citizen. Emphasized were the responsibilities assumed by being a professional man. These were a responsibility to his profession, to his patients and to the public. The professional man's value of his own citizenship is where he shows his obligations to the public particularly when he assumes unimposed obligations.

Dr. H. Milburn thanked the speaker and the meeting adjourned.

E. R. B.

Dr. W. C. G. Collins, Ottawa, was elected president of the **Eastern Ontario Dental Association** at the organization's 80th annual convention in session at the Chateau Laurier, Ottawa.

Immediate past-president is Dr. A. C. Stinson, Ottawa, and vice-president (president elect for next year) is Dr. H. A. Stewart, Kingston.

Dr. A. Stone, Ottawa, was chosen as secretary-treasurer, and auditors elected were Dr. L. E. MacLachlan and Dr. I. W. Hamilton, both of Ottawa.

Speakers were: Dr. E. E. Johns and Dr. Don Hult, Kingston, on cleft palate rehabilitation; Dr. J. B. Derbyshire, Smiths Falls, on photography in dentistry; Dr. N. B. Lightford, Ottawa, modern concepts in the treatment of displaced teeth in children; Dr. L. E. MacLachlan, Ottawa, oral

photography; Dr. Chester Perry, Detroit, Mich., dentures; Dr. H. E. McIntosh, Ottawa, office procedure; Dr. J. A. Chomyn, Ottawa, dentistry for children; Dr. Bernard Rouch, Montreal, movies on dentistry, and Dr. V. Barts and Dr. J. D. Lamping, of Pembroke, dentition analysis.

In the afternoon Dr. Chester Perry, University of Detroit, lectured on denture construction, and C. G. Brownell, spoke on equipment and lighting techniques for oral photography.

The Kingston and District Dental Society held its first meeting of the season at Morrison's Lounge. Dr. John Lyon was chairman for the dinner meeting. The result of the election of officers was as follows: President, Dr. H. R. Campbell; vice-president, Dr. W. H. Treleaven; secretary, Dr. C. F. Sorensen; treasurer, Dr. R. L. Villard; publicity, Dr. R. E. Feasby; house, Dr. R. F. Werry.

It was announced that during the 1957 National Health Week there will be a National Dental Health Day, Feb. 6. The Kingston Dental Society intends to participate in this project. Dr. E. B. Sparks led a discussion on administrative matters and Dr. E. E. Johns spoke briefly on public relations.

On Saturday, October 20th, the **London and District Dental Society** held the first stated meeting of the season at the Hotel London.

During the business session the following officers were installed:

- A. J. Harris—President.
- R. J. Sutherland—Past-President.
- W. H. Mason—Vice-President.
- D. C. Way—Treasurer.
- D. E. Whiteman—Secretary.

The speaker was Dr. Frank Martin, president-elect of the International College of Dentists and head of the Department of Crown and Bridge Prosthesis at Toronto.

Using colour movies and slides Dr. Martin illustrated a practical procedure for fixed bridge abutment restorations. Making use of speeds of 12,500 r.p.m. he cuts the interproximal slice from the gingival to the occlusal to avoid a shoulder. A kite-cord previously dipped in 1:100 adrenaline chloride is tied around the neck of the tooth and a chamfer may be prepared by using a smooth ended tapered diamond point. The smooth end rides the cord so that the gingiva is both protected and retracted. The cord is removed and an impression taken using the hydrocolloid technique.

Dr. Martin was introduced by Cece Strachan and thanked by Bob Wainright.

The following Thursday at the "Y" Jim

Millar led a discussion of the paper during the luncheon meeting of the Study Club. It was unanimously agreed that Dr. Martin gave an excellent presentation. The Study Club luncheons are held every Thursday from October to May.

D. E. W.

Renfrew County Dental Society sponsored the first of the Fifth Annual Dental Seminars in Pembroke, on October 17 and 18.

Drs. S. A. MacGregor and D. J. E. Mitchell presented an interesting two-day refreshment course.

Drs. E. A. White, Mark Boyes and D. L. Rife attended the banquet on October 17th, as representatives of the Dental Seminar Committee. Dr. White spoke during the

evening on the Dental Public Health Committee of the Ontario Dental Association, its aims and its progress.

The local Seminar committee was comprised of Doctors J. D. Lamping, chairman; E. M. Murphy, Wm. Ledger, A. H. Reid and John C. Derbyshire.

Dr. MacGregor addressed the Laurentian Home and School Club, in the evening, his subject "Your child and mine." Dr. Mitchell addressed the Highview Home and School Club on "What do you know about your teeth."

The Seminar continued on October 18th and finished at 5 p.m.

The Renfrew County Dental Society was proud to be the sponsor of the first Seminar for the year.

J. D. L.

In Memoriam

Peter McIntyre — Dr. Peter McIntyre of North Bay, Ontario, died on August 7, 1957. He received his early education in Parkhill, and in 1917 graduated from the Faculty of Dentistry, University of Toronto. In 1919 he went to North Bay where he continued his dental career until February, 1956, at which time he was forced to retire due to ill health.

Dr. McIntyre served on North Bay Collegiate Board for five years, was a Charter member of the North Bay Lions Club and an active member of the Knights of Columbus.

Surviving Dr. McIntyre are his wife; four sons, Grant, Surgeon Lt. Cmdr., Ottawa; Gerard, Toronto; William, Sudbury; and Lt. Cameron McIntyre, Halifax; and three daughters; Barbara, Toronto; Audrey, Montreal; and Janet, North Bay. There are six grandchildren.

James Gestie Perkin — Dr. James Gestie Perkin of Toronto, died suddenly November 6, 1956 at Detroit, Michigan.

Dr. Perkin received his early education at Oakwood Collegiate, Toronto, and graduated from the Faculty of Dentistry, University of Toronto in 1925. He also held the Bachelor of Science (Dent.) degree.

He was President-elect, Central Dental Society 1940, and Chairman, Committee on Dental Care and Internship in Hospitals. Also Associate in Prosthodontics, University of Toronto and a Fellow of the American College of Dentists.

Dr. Perkin was a member of the Royal Canadian Yacht Club, also of Eaton Memorial Lawn Bowling Club; Bloor and Yonge Dental Bowling Club, being president in 1940, and also a member of Dufferin Lodge, A.F. & A.M.

He leaves a brother, Dr. Frank Scott Perkin, of Detroit.

Arthur Harold Walton — Dr. Arthur Harold Walton of Picton, Ontario, died in July, 1956, after a short illness.

Dr. Walton was a member of the United Church and for many years was active in Sunday School and young people's work. He served overseas in World War I and was keenly interested in the welfare of veterans. He was a past president of Branch 78 Canadian Legion and a past president of Picton branch of the Navy League, and was also a member of the Masonic Order.

Surviving are three sons, Lieut. Cmdr. David Walton, R.C.N., Dartmouth, N.S., John, of Cobourg and Paul of Harvard University and a sister, Mrs. J. H. Ryckman, Houston, Texas.

Alexander McArthur Lowey — Dr. Alex Lowey, 55, of Moose Jaw, Saskatchewan, died in October after a long illness.

He was born in Bruce County, Ontario, and moved to Weyburn, Saskatchewan, at an early age. After graduating from the University of Saskatchewan, he attended the Dental College at the University of Minnesota from which he graduated in 1935. He entered the practice of Dentistry in Moose Jaw with Dr. Harold Johnston.

Dr. Lowey was a very popular member of the profession. He served in many capacities and notably as President of the Saskatchewan Dental Association and the Moose Jaw Society. He also served on the Health Insurance Studies Committee of the Canadian Dental Association.

He was extremely active as indicated by his membership in the Masonic Lodge, Qu'Appelles Men's Club. He was one of the organizers of the Moose Jaw Figure Skating Club and served as President for nine years. He and his wife were silver medallists in dancing and were performers and judges in dancing and figures.

Dr. Lowey is survived by his widow Margaret, one daughter, Mary Elizabeth, and one son, James Alexander.

Garnet Perdue — Dr. Garnet Perdue died on September 24, 1956, in Detroit, Michigan.

Dr. Perdue graduated from the Faculty of Dentistry, University of Toronto, in 1920.

Surviving Dr. Perdue is his wife, Dr. Grace Meehan.

Richard Nixon Berry — Dr. Richard Nixon Berry, died on September 17, 1956.

Dr. Berry graduated from the Royal College of Dental Surgeons of Ontario in 1898.

Vivian Stephen Fournier — Dr. Vivian Stephen Fournier, 58, died at Hialeah, Florida on October 28, 1956. He was born and received his early education in Sudbury, Ontario, graduating from the University of Toronto School of Dentistry in 1916. Following graduation he joined the Royal Navy as surgeon sub-lieutenant and was stationed at Malta Naval Base, and saw active service on minesweepers in the Black Sea and the Mediterranean. Upon his return he practised in Sudbury until retirement in 1955.

Dr. Fournier was a life-long member of the Lions Club and was an executive member for many years with the Sudbury Council, Knights of Columbus. He served for a number of years as a member of the high school board and the mining and technical school advisory committee, and also as president of the Northern Ontario Dental Association 1949-50-51.

Surviving Dr. Fournier are his wife, Willo, four daughters, Mrs. Sidney Sheahan, of Frood; Mrs. William Allen, of San Antonio, Texas; Mrs. John Galey and Janisse Fournier, of Sudbury; and two sons, Thomas, of Hialeah, and William, of Sudbury. Three sisters and three brothers, also survive. A brother, Donald, predeceased him in 1951.

Lloyd Stafford Godwin — Dr. Lloyd Stafford Godwin died in August, 1956, aged 64, following a lengthy illness.

Dr. Godwin was born in London, Ontario. He graduated from Toronto Dental College in 1914 and was post graduate of Ann Arbor University, Michigan. He practised in Welland, Ontario, for nine years and in 1924 went to Detroit, Michigan, where he continued his dental practice until ill health forced him to retire.

Surviving Dr. Godwin are his wife, Effie, two sons, Dr. John Cameron, of Detroit; and Dr. William, of Ann Arbor, Mich.; one daughter, Mrs. Warren McAfee, of San Diego, California; two brothers, Dr. Douglas D. Godwin, of Detroit and Kingsville and Mr. Karl Godwin of Westport, Conn., and four sisters, Mrs. E. C. Currie, Mrs. E. McCormick, Mrs. P. Hartwick, all of Toronto, and Mrs. G. Williams, of London. There are nine grandchildren.

William Adams Spence — Dr. William Adams Spence died on October 30, 1956. Dr. Spence practised in Brussels, Ontario.

Surviving are his wife, Alma Rann; three brothers, David, of Shelburne, John, of Laurel and Dr. Earle of Hagerstown, Maryland.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1957	Winnipeg, Manitoba	June 23rd-26th
1958	Montreal, Quebec	Oct. 5th-26th
1959	Halifax, Nova Scotia	June 21st-24th
1960	Ottawa, Ontario.	_____

FUTURE EVENTS

Date	Function	Location	Officer	Address
Feb. 21, 1957	Dental Workshop Conference	Royal York Hotel, Toronto Ontario	Dr. F. H. Compton	City Hall, Toronto, Ont.
May 12-15, 1957	Ontario Dental Assoc. Convention	Toronto, Ont.	Sec. Mrs. R. E. Booker	234 St. George St. Toronto 5.
May 16-18, 1957	B.C. Dental Assoc. Annual Convention	Victoria, B.C.	Dr. W. A. T. Salter	408 Campbell Bldg. Victoria, B.C.
Sept. 7-14, 1957	Congrès de la Fédération Dentaire Internationale	Rome, Italy	G. H. Leatherman	Secretary, London, England

GRADUATE COURSES

Faculty of Dentistry, University of Toronto

Applications will be received up to March 1st for enrolment in postgraduate courses leading to specialist certification in the fields of Dental Oral Surgery and Anaesthesia, Orthodontics, Paedodontics, and Periodontics. Enrolment in each course is limited, and the courses extend over a period of two academic years (Surgery three years). Applicants must present evidence of satisfactory completion of courses leading to the D.D.S. degree or its equivalent from an acceptable dental school.

For further information and application forms address inquiries to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College Street, Toronto, Ontario.

SHORT GRADUATE COURSES

ORTHODONTICS

March 11-15, 1957

Enrolment Limit 12

This course is designed for the general practitioner. It comprises a review of anatomical structure, the development of head and jaws, normal occlusion and, in addition, the aetiology of malocclusion, tissue reaction during orthodontic therapy and modern therapeutic methods for the interception of malocclusion. Laboratory and clinical periods will be scheduled to include patient examination, appliance construction and manipulation. Sessions will be scheduled during which registrants may present practical cases for consultation and discussion.

The course will be under the general direction of Dr. D. G. Woodside.

Tuition Fee \$100.00

DENTAL ORAL SURGERY AND ANAESTHESIA

April 29-May 3, 1957

Enrolment Limit 12

The course will consist of a brief review of the fundamentals of surgery, including anatomy, pathology, radiography, differential diagnosis, and pre-operative and post-operative considerations. The systemic factors which might limit or contraindicate the extraction of teeth will be discussed, together with the latest developments in chemotherapy. Instruction will be given in local and general anaesthesia, the pathological relationship of the teeth to the maxillary sinus, fracture of the jaws, cysts, root resections, abnormal frenae, malposed and impacted teeth, cellulitis and deep neck infections, flap operations and the removal of difficult teeth and roots. An effort will be made to deal specifically with the problems which confront the general practitioner in his office.

The course will be under the general direction of Dr. J. H. Johnson.

Tuition Fee \$100.00

New York University College of Dentistry—Periodontia and Oral Medicine Refresher Course.

Date: February 20-May 1, 1957, Wednesdays

Time: 4 P.M. to 6 P.M.

Fee. \$211.50 including tuition, books, instruments.

This course will be given by Professor Samuel Charles Miller and Associates. For further information write: Secretary, Postgraduate Division, New York University College of Dentistry, 209 East 23rd St., New York 10, N.Y.

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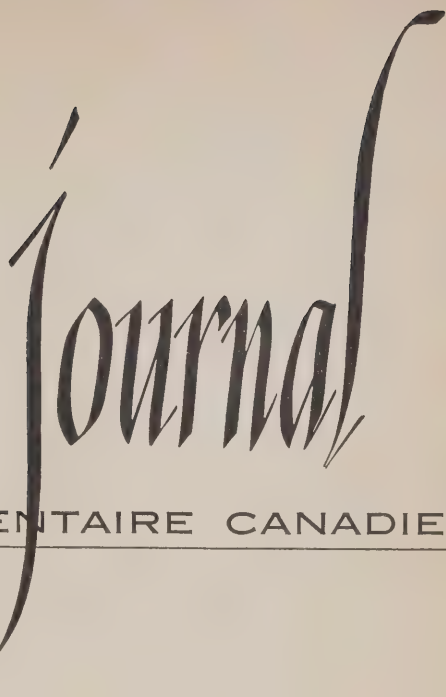
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DE L'ASSOCIATION DENTAIRE CANADIENNE

Traitement des gingivo-stomatites*

par MICHEL DECHAUME, Paris, France

Dans la pratique courante, lorsqu'un médecin est consulté par un malade atteint de stomatite, sans préciser toujours son diagnostic, il prescrit:

- 1) essentiellement un traitement général, hier avec des vitamines, puis des sulfamides, aujourd'hui avec la pénicilline, l'auroéomycine. . .
- 2) accessoirement: des bains de bouche avec des solutions antiseptiques ou calmantes, des applications locales, hier avec du bleu de méthylène ou des arsénobenzènes, puis des sulfamides, aujourd'hui avec de la thyrothrycine. . .

Lorsque le même malade consulte un chirurgien-dentiste ou stomatologiste, on pourrait croire que, par déformation professionnelle, celui-ci va mettre en oeuvre essentiellement un traitement local. Or, trop souvent il n'en est rien, il agit de la même façon que le médecin.

Faut-il ajouter que les dermatologistes eux aussi, par un curieux illogisme, traitent les stomatites d'une façon très différente des maladies de peau. En effet,

pour ces dernières ils adjoignent au traitement général un traitement local, dont le premier temps est toujours un décapage des téguments, c'est-à-dire une "toilette de la dermatose" (Desaux). Au contraire, ils négligent ce temps essentiel pour les maladies de la muqueuse buccale.

Certes, le plus souvent ainsi des stomatites paraissent guérir. Plus exactement il y a disparition ou atténuation des signes généraux ou fonctionnels. Mais localement, il n'y a pas toujours "restitutio ad integrum". Or, il n'est pas indifférent que l'évolution se fasse en quelques jours ou en quelques mois, vers un état plus ou moins proche de l'état normal. En effet, en raison de leurs connexions anatomiques, l'inflammation de la gencive gagne le ligament. Les dents se trouvent, du fait de cet oedème, surélevées, ce qui entraîne leur surcharge articulaire, d'où alvéolyse, c'est-à-dire destruction du rempart alvéolaire et ébranlement des dents. Ainsi, une gingivo-stomatite traitée insuffisamment peut conduire à la paraden-

* Conférence donnée à la Société Dentaire de Montréal, le 20 avril 1956.

tose, qui parfois occasionne des complications générales et toujours fait du malade un édenté, c'est-à-dire, un infirme. Il est donc essentiel de préciser les modalités d'un traitement rationnel des gingivo-stomatites. Je n'envisage, bien entendu, que les gingivo-stomatites banales, qui surviennent dans de multiples conditions étiologiques, éliminant les stomatites à germes définis comme certaines stomatites à streptocoques . . . ; les stomatites des maladies du sang caractérisées (leucémies . . .); les manifestations spécifiques de quelques fièvres éruptives; les lésions superficielles de la muqueuse buccale: aphte, Brocq-Duhring. . .

* * *

Pour orienter la thérapeutique, il faut d'abord se rappeler les conditions normales.

La muqueuse buccale est essentiellement constituée par:

un épithélium pavimenteux,
le derme;

en dehors du palais et des gencives, un hypoderme lâche: au milieu des travées fibreuses stagne la lymphe interstitielle, véritable milieu intérieur de l'organisme où, d'après Policard, se déroule une partie des actes essentiels du métabolisme. L'état physico-chimique de ce milieu conditionne l'éclosion et le développement des micro-organismes, toujours considérés comme causes déterminantes des maladies infectieuses, alors qu'ils en sont seulement les agents pathogéniques. Or la stabilisation physico-chimique de ce milieu est contrôlée par la fonction colloïdopexique et phagocytaire du système réticulo-endothélial.

Ainsi la muqueuse buccale apparaît comme une membrane vivante entre le milieu aqueux extérieur et le milieu intérieur lympho-interstitiel. Normalement, en dehors du nouveau-né, tous les épithéliums de revêtement sont imperméables, principalement aux micro-organismes et aux protéines. Et le système réticulo-endothélial agit manifestement sur cette perméabilité. La modification de l'équilibre acide-base donnant un pH évoluant

vers le côté acide de la neutralité provoque la lyse des éléments cellulaires: ainsi s'établit une perméabilité de la muqueuse buccale qui met en rapport direct le milieu externe buccal et le milieu intérieur.

Cette physiologie complexe du tissu réticulo-endothélial fait comprendre que toute cause amenant sa perturbation entraînera des modifications profondes du milieu huméral, donc des manifestations muqueuses.

Ces notions doivent être rapprochées du biotropisme de Milian, dont vous connaissez la théorie. En dehors des cas pathologiques, la cavité buccale contient des micro-organismes et se trouve exposée à des contaminations fréquentes. Fort heureusement, le liquide buccal total contient normalement, ainsi que l'ont confirmé les travaux de Cafflish, de nombreuses substances bactéricides dont le lysozyme de Fleming. Cette propriété s'ajoute à son action mécanique et chimique.

Mais parfois, sous l'influence d'une cause exogène médicamenteuse, physique ou autre, il peut se produire un éveil vital d'un micro-organisme latent: biotropisme direct, lorsque le médicament stimule l'activité du microbe contre lequel il est employé; biotropisme indirect, lorsqu'il exalte la virulence d'un microbe latent.

Il faut donc condamner définitivement cette opinion de Babonneix suivant laquelle, si les causes locales suffisent à entraîner la stomatite, les causes générales n'y parviennent qu'à la faveur des lésions locales concomitantes. Bien au contraire, les causes locales ne suffisent pas à déclencher une stomatite. *A l'origine on retrouve toujours une cause générale:* maladies infectieuses aiguës ou chroniques, à toutes les périodes de leur évolution; infections du tube digestif; intoxications endogènes d'origine gastro-intestinale, hépatique, rénale; intoxications exogènes accidentelles, professionnelles, médicamenteuses; maladies du sang; avitaminoses; déséquilibre par excès glucides, de lipides, qui favorisent une intoxication d'origine digestive ou

le développement d'une avitaminose. L'alcool, même à doses faibles, exercerait une action neutralisante sur le complexe vitaminique B, dont l'insuffisance peut donner lieu à des troubles neuro-trophiques.

Cependant des causes favorisantes locales et régionales interviennent aussi.

Le rôle des dents est si manifeste que les stomatites n'existent pas chez les édentés.

Les espaces interdentaires, les cavités de carie, les obturations défectueuses, le tartre, sont autant de facteurs de rétention favorables à la pullulation microbienne.

D'autre part, l'éruption dentaire, les infections apicales sont, par l'irritation du trijumeau qu'elles provoquent, à l'origine de troubles sympathiques qui créent un état de moindre résistance de la muqueuse.

Enfin, les décollements gingivaux, la pyorrhée alvéolo-dentaire ou paradentose constituent des foyers septiques qui réinoculent continuellement la muqueuse.

* * *

A ces considérations étiologiques et pathogéniques qui sont bien classiques doivent s'ajouter des notions auxquelles on n'attache pas l'importance qu'elles méritent, alors qu'elles commandent l'orientation de notre thérapeutique.

1°—*Les foyers septiques interdentaires, gingivaux et apicaux sont situés en-dehors de la circulation générale.* Cela se comprend facilement pour les foyers septiques interdentaires et les culs-de-sac gingivaux. Dans les foyers d'infection apicaux, il faut distinguer le granulome qui est vasculaire, de la racine infectée, privée de toute circulation, car la circulation ligamentaire ne saurait être comparée à la circulation périostée d'un os.

Ainsi, fait particulier dans la pathologie, ces foyers septiques de la cavité buccale constituent d'une part de véritables centres de pullulation microbienne, qui agissent non seulement par essaimage mais aussi par les décharges de toxines ou de produits de désintégration pro-

téique; d'autre part, des bastions de résistance où n'accèdent pas les antibiotiques introduits dans l'organisme par voie interne. Dans ces conditions, si la médication générale a une action sur les microbes qui essaient et les produits qui diffusent, elle est inopérante sur ce qu'on pourrait appeler "l'usine à microbes". Il est facile de comprendre ce qui va se passer. L'utilisation des antibiotiques conduit très rapidement à la mise en évidence de résistances vraie et fausse. La première apparaît d'emblée: certains antibiotiques n'ont aucune action sur quelques microbes déterminés. La seconde est créée par l'utilisation du médicament; elle a été étudiée plus spécialement par les urologistes qui ont précisé le rôle de la persistance de foyers infectieux, non traités par des mesures locales particulières. Elle s'observe de même dans les infections gingivo-dentaires si l'on ne prend pas soin de supprimer les foyers infectieux par un traitement local minutieux.

2°—*Les foyers septiques interdentaires ou muqueux, en un mot les microbes contenus dans la cavité buccale, sont toujours protégés par un enduit qui s'oppose à la pénétration des médicaments utilisés en application locale.* Aucun médecin ne s'avise de déposer une pommade antiseptique sur une lésion cutanée sans l'avoir, au préalable, détergée. Bien plus, pour en assurer la pénétration, il la maintient, en général, au contact des téguments pendant un temps fort long, ce qui est relativement facile au niveau des téguments cutanés. Dans la cavité buccale, il en est tout autrement; la sécrétion continue de salive fait que tout médicament déposé sur la muqueuse est rapidement éliminé. Et d'autre part, dans les cas de stomatite, la salive devient plus visqueuse et forme, sur les parties ulcérées, un véritable film qui empêche plus encore toute pénétration médicamenteuse.

Dans ces conditions, quel peut être l'effet d'un antiseptique si puissant soit-il?

3°—Il convient aussi de retenir les travaux de Reilly et de son Ecole qui mettent en évidence le rôle du système neuro-végétatif au cours des infections locales.

Sitôt déclenchée l'action microbienne, le système neuro-végétatif conditionne pour une large part une réaction inflammatoire locale: hypérémie, modification de la perméabilité capillaire (exsudation lymphatique), afflux leucocytaire, réaction des cellules fixes (tissu réticulo-endothélial).

Ces perturbations vaso-motrices constituent, selon leur degré, un élément de résistance ou de réceptivité aux agents microbiens. En particulier, si la réaction inflammatoire est incapable d'enrayer la multiplication des germes, le système neuro-végétatif subit l'action de leurs poisons, déterminant localement ou à distance des perturbations vaso-motrices et les lésions vasculaires les plus graves.

Si l'excitation neuro-végétative est brutale, elle perturbe le régime circulatoire "en déterminant une ischémie plus ou moins durable suivie d'importants troubles de la perméabilité capillaire et d'infiltrats hémorragiques; elle altère la nutrition des tissus et crée des conditions favorables à la multiplication in situ des germes qu'ils hébergent à l'état latent".

Une irritation neuro-végétative intéressant un tissu préalablement infecté est capable de déterminer une inflammation impétueuse, nécrotique par places, une exsudation de fibrine, une diapédèse intense, une mobilisation des histiocytes aboutissant en quelques jours à une organisation conjonctive et permettant l'isolement, puis l'encapsulation des foyers (inflammation hyperergique). La persistance de l'irritation peut entraîner des troubles durables (paradentose).

Comme le disent encore Reilly et Laplane: pour être d'origine tissulaire, la défense n'en est pas moins conditionnée par le système nerveux qui régit et coordonne les fonctions des cellules, règle par l'intermédiaire des vaso-moteurs leur équilibre nutritif. Il serait dès lors arbitraire d'en faire abstraction.

Et on comprend mieux le danger de

laisser persister des foyers microbiens, qui constitueront des causes d'irritation permanente du système neuro-végétatif.

4°—Le rôle des causes générales est admis facilement; on néglige cependant l'état de dénutrition dans lequel se trouvent ces malades. Dès les premiers jours de la maladie, du fait de la gêne de la mastication et de la déglutition, ceux-ci restreignent leur alimentation. Pour peu qu'elle se prolonge, la balance traduit de façon indubitable cette répercussion sur l'organisme, et ce n'est pas un des moindres facteurs d'aggravation dans l'évolution des stomatites. Comme le dit Leriche: "L'alimentation, et cela se comprend, est une condition essentielle de l'équilibre végétatif".

Les conclusions thérapeutiques découlent de ces considérations:

En présence d'une stomatite, ce qui importe en premier chef, c'est de la définir. Si elle apparaît parfois comme la manifestation buccale d'une maladie générale caractérisée, d'une leucémie, d'une agranulocytose, elle est plus souvent un symptôme dominant, apparemment isolé, dont il faut retrouver l'étiologie. Seul un diagnostic précis peut permettre d'établir une thérapeutique correcte, donc efficace. Pendant la période que nécessitent les examens, il ne faut pas demeurer inactif mais assurer d'emblée: le nettoyage mécanique de la cavité buccale; une alimentation équilibrée avec un régime $\frac{1}{2}$ liquide.

Nettoyage mécanique de la cavité buccale. — Il demande la collaboration du spécialiste et du malade. Le spécialiste doit immédiatement pratiquer un écouvillonnage avec des tampons de coton et de l'eau oxygénée, suivi de pulvérisations énergiques; puis réaliser un premier détartrage aussi complet que possible, sans fatiguer le malade; terminer enfin par une cautérisation des gencives avec des cristaux écrasés d'acide trichloracétique pur.

Ces nettoyages seront renouvelés dans les jours qui suivront en évitant toute manoeuvre susceptible de déclencher une

hémorragie avant que l'examen de sang ait été fait.

Plusieurs auteurs s'élèvent énergiquement contre cette intervention qui, pour eux, peut être le point de départ d'une septicémie. Evidemment toutes ces manœuvres doivent être faites avec la plus grande douceur, sans traumatisme de la muqueuse. Mais est-il moins dangereux de laisser persister une infinité de foyers infectieux représentant autant de sources d'inoculation permanente, que de supprimer ces foyers par des manœuvres douces suivies immédiatement de déterision et d'applications de topiques. Ce danger du détartrage est exagéré, car le sang est un mauvais milieu de culture; il pourrait d'ailleurs dans les cas graves être écarté par une cure parallèle de pénicilline en injection.

De son côté, le malade doit s'astreindre à des soins d'hygiène bucco-dentaire rigoureux. Roy a pu dire que les stomatites se guérissaient avec une brosse à dents à poils durs et de l'eau pure. Et ceci n'a rien d'exagéré. Mais il faut au malade une "volonté de fer" pour supporter ces manœuvres douloureuses. Il n'en reste pas moins que le brossage des gencives et des dents doit être réalisé énergiquement trois fois par jour avec une poudre, du savon ou tel autre produit (il n'est pas indispensable d'utiliser un médicament).

L'atomiseur (projection d'eau mélangée à de l'acide carbonique sous pression moyenne) réalisé par la décompression d'un obus d'acide carbonique est à recommander après le brossage, il complète le nettoyage mécanique.

Les antiseptiques enfin peuvent être utilisés après brossage, non en collutoires ou badigeonnages, dont l'action est très éphémère, mais bien plutôt avec des pastilles de sels d'acridine, ce qui réalise une désinfection continue. Les tablettes de Pénicilline (500 à 1,000 unités par tablette, 12 à 18 par jour) ne sont pas encore d'application courante (éviter les bains de bouche alcalins). Certains auteurs ont signalé des réactions après l'usage de pénicilline calcique qui semble plus irritante que la pénicilline sodique. On a

observé également des lésions après l'emploi de la pénicilline ou des sulfamides en application locale. La vitamine A en solution huileuse donne parfois d'excellents résultats. La douleur peut rendre nécessaire la prescription de médicaments calmants. Les solutions chloralées sont parmi les plus efficaces.

Alimentation équilibrée avec régime 1/2 liquide. C'est là un facteur trop souvent négligé et dont l'importance est cependant capitale: un sujet, pour réparer ses plaies, a besoin d'un nombre de calories plus grand que normalement. Malheureusement, il est difficile de donner, sous forme liquide, les éléments suffisants.

Depuis longtemps, on a souligné l'intérêt des vitamines. Plus récemment d'autres auteurs ont montré comment une insuffisance alimentaire pouvait entretenir une leucopénie préjudiciable à la bonne cicatrisation. Enfin, l'importance des protéines a été démontrée.

Avec GOUNELLE et MUGNIER, nous avons établi la formule d'un régime équilibré, dont l'ingestion pourra se faire en 3 ou 4 prises dans la journée:

- lait entier: 1 litre pour confectionner bouillies et purées ou 130 gr. de lait en poudre.
- purées avec (pommes de terre .. 400 gr.
(beurre 10 gr.
(oeuf 1
- bouillies avec (farine de froment 40 gr.
farine de soja complète
40 gr. (bouillie maintenue
1/4 heure au moins sous
bonne cuisson pour détruire le principe contenu dans le soja cru qui inhibe trypsine pancréatique)
(biscuits: 100 gr.
- compote de fruits: 100 gr.
- jus de 3 oranges: 135 gr.
- sucre: 40 gr.

Une fois le diagnostic établi, ce traitement doit être complété par:

Traitement local. S'il n'y a pas de contr'indications tirées de l'état général (leucémie) terminer la mise en état de la bouche; détartrage, soins dentaires, traitement des infections apicales, extractions. . . Le malade, d'autre part, continue à surveiller son hygiène bucco-dentaire d'une façon minutieuse.

Traitement général. En dehors de quelques cas où l'étiologie est manifeste, on a tendance à croire qu'en présence de ces manifestations nettement inflammatoires, le traitement général doit recourir essentiellement aux antibiotiques.

Or, il y a deux façons d'agir: favoriser la défense spontanée de l'organisme ou se substituer à lui en apportant des moyens de défense tout préparés.

On peut reprocher à la thérapeutique antibiotique, malgré ses succès, de reposer sur le fait que le microbe est tout dans la maladie, et de négliger la toxicité des produits utilisés, notamment en ce qui concerne les sulfamides, l'auromycine. . . En effet, il semble bien que la gravité et l'évolution des stomatites soient souvent moins conditionnées par la virulence d'un microbe donné que par:

—des troubles sanguins: neutropénie, anémie. . . La simple absence d'une réaction leucocytaire ne doit-elle pas être considérée comme un signe de défaillance organique? Quand on connaît le rôle des globules blancs, spécialement des polynucléaires, dans la défense locale, ceci n'est pas pour surprendre;

—des lésions hépatiques légères qui, sans signes cliniques évidents altèrent la fonction antitoxique et la fonction sanguine du foie.

Il faut donc se méfier de la chimiothé-

rapie ou des médications anti-infectieuses trop agressives. Elles constituent une arme à double tranchant qui peut sidérer la fonction hépatique.

Il paraît plus sage d'aider avant tout le foie à se défendre pour jouer son rôle antitoxique et sanguin; les extraits hépatiques seront donc prescrits ainsi que toute médication susceptible de stimuler la fonction hépatique; au besoin une petite transfusion. L'acide ascorbique donne aussi de bons résultats.

Dans le cas où la granulocytopenie est manifeste, on aura recours aux médications leucogènes (injections intraveineuses de nucléotides pentosiques ou sous-cutanées de nucléinate de soude). L'alimentation doit, bien entendu, continuer à être surveillée.

Et les antibiotiques ne seront donnés que dans les cas sévères.

A beaucoup, ce traitement des stomatites peut paraître simpliste, il rentre cependant dans le cadre de la médecine la plus orthodoxe. En présence d'un malade, il importe en premier lieu d'établir un diagnostic, puis la thérapeutique est instituée. Il ne saurait y avoir un médicament pour les stomatites.

Quelques mesures de précaution à prendre lors des traitements dentaires de cardiaques

L'administration d'un sédatif avant la séance évite au patient l'augmentation de tension et la tachycardie causées par la crainte et la douleur. On évitera les longues séances, on n'extraira pas plusieurs dents à la fois, on évitera l'adjonction d'adrénaline à l'anesthésique local en cas d'hypertension, d'hyperthyroïdie, d'affections coronariennes, notamment d'angine de poitrine. Avant la séance, ces patients recevront de la nitroglycérine ou un verre de whisky. Les patients atteints de rhumatisme cardiaque ou d'un vice congénital recevront, 30 minutes avant une extraction dentaire, 600,000 U. de pénicilline-procaïne huileuse avec 2% de monostéarate d'aluminium en i.m. à titre de protection contre une endocardite bactérienne.

ÉDITORIAL

Le service dentaire d'un hôpital

On nous pardonnera de revenir sur un sujet dont nous avons traité à quelques reprises dans nos pages éditoriales, ces derniers mois. Mais cette question d'un service dentaire hospitalier nous tient à coeur pour deux raisons principales: d'abord, si nous voulons que notre profession occupe la place qui lui revient dans le domaine de la santé, il faut que l'hôpital, qui constitue la base des services de santé, lui donne asile, non pas comme à une invitée ou comme à une mendiante, mais comme à une partenaire, et une collaboratrice. L'autre raison qui nous porte à s'étendre sur le problème nous est fournie par l'émoi causé au sein des délibérations de l'Association dentaire canadienne, à Banff, en juin dernier, par la nouvelle annonçant qu'un mouvement se dessinait à différents endroits du pays pour mettre les services dentaires des hôpitaux sous la domination intégrale des services de médecine. Le Comité des Services dentaires hospitaliers, pour parer à cette difficulté, a demandé à l'assemblée d'approuver une résolution catégorique de nature à donner droit de cité aux dentistes dans les hôpitaux.

Dans cette résolution, qui devait être envoyée aux dix Ministères de la Santé des provinces du Canada, on y lit un article qui ajoute un élément nouveau aux relations du dentiste avec l'hôpital. Cet article se lit comme suit:

"Un membre du personnel dentaire d'un hôpital peut faire admettre et donner son congé à un patient, en collaboration avec un médecin."

Cette spécification change quelque peu la procédure suivie jusqu'à maintenant par un dentiste qui soigne ses malades à l'hôpital. Le dentiste faisait admettre son patient, lui donnait les traitements prescrits et lui donnait son congé, sans l'intervention d'un médecin. L'Association en formulant cette recommandation veut tout simplement, non pas porter atteinte aux privilèges d'un dentiste, mais bien le protéger, en protégeant aussi le malade. Comme le chirurgien demande à un médecin d'examiner son malade avant l'intervention chirurgicale, le dentiste devrait lui aussi demander une consultation à un médecin avant de procéder aux traitements qui s'imposent. Alors, à l'entrée du malade, il serait bon que le dentiste confie son patient à un médecin pour que celui-ci l'examine et lui fasse un rapport sur son état général; ainsi, si une complication survient, le dentiste possèdera plus de renseignements sur la constitution de son malade et pourra y apporter plus tôt les remèdes appropriés. Un autre avantage de cette façon de faire serait d'éviter de remettre en circulation un patient qui souffrirait à son insu d'une maladie organique et qui aurait fait traiter dans un hôpital une lésion ou une anomalie pathologique dentaire. Cette mesure a pour but de fournir au dentiste traitant une meilleure connaissance de son patient et de lui prodiguer un service plus complet et plus ordonné. C'est pourquoi, avant de donner congé à son patient, le dentiste devrait le faire revoir par le même médecin pour que celui-ci constate que l'intervention dentaire que le patient a subie n'a pas porté atteinte à son état général.

Ce n'est pas du tout faire montre d'infériorité que de demander une consultation; on ne peut être maître dans plusieurs domaines; le dentiste s'occupe des maladies de l'appareil buccal, le spécialiste en médecine, des maladies constitutionnelles. Les thérapeutes

des diverses disciplines doivent conjuguer leur science pour le plus grand bien des malades. Cette décision de l'A.D.C. nous paraît très sage et destinée à nous concilier l'estime des médecins. Il faut rendre à César ce qui appartient à César, dans tous les sens de l'expression.

GERARD DE MONTIGNY

Examinons-nous suffisamment la langue de nos patients?

Centrés sur les cavités des dents à examiner, sur l'aspect plus ou moins désertique de procès alvéolaires ne demandant qu'à redevenir florissants, ou sur des gencives ramollies ou sanguinolentes qu'il conviendrait de raffermir, nous oublions facilement d'autres alentours capables de nous renseigner sur un état général qui faciliterait peut-être certains diagnostics.

Ainsi en est-il de la langue.

Sans doute existe-t-il des macroglossies que nul ne saurait méconnaître, du moins, nous l'espérons. Il y a les rhagades aux multiples origines, mais il y a, comme l'avait si bien décrit Tusseau, un grand nombre d'autres aspects vraiment dignes d'intérêt.

Evidemment, pour ceux qui veulent voir en elle un "miroir" de l'estomac, il y a la langue crémeuse de l'embarras gastro-intestinal ou la langue fissurée, comme la-bourée par un peigne, rappel d'anciennes gastro-entérites.

Il y a la langue lessivée par les sialorrhées, la langue râpeuse ou en peau de chagrin des brûlures par caustiques peut-être, mais sèche des dormeurs à bouche grande ouverte ou ligneuse pour ne pas dire "de bois" lors des réveils des ivrognes ou simplement des noctambules. Souvenons-nous de la langue vernissée de la grippe, surtout en cette époque de froidure, de la langue visqueuse (Martinet) de l'azotémie, de la langue cyanique des états pathologiques déterminant l'asphyxie, les stases veineuses.

Nous ajouterons les langues fuligineuses, dites langues de perroquet, de l'urémie et des septicémies. Nous n'insisterons pas sur la langue rôtie de la typhoïde, la langue framboisée de la scarlatine, ni sur la langue porcelanique des leucoplasies.

Enfin nous rappellerons la langue de bois des mycoses et la langue noire pileuse dont on a beaucoup discuté l'étiologie.

Mais à cet ensemble plus ou moins pictural, Kalk (Dtsch. med. Wschr. 80, 1955, p. 955) ajoute la langue rouge lisse, symptôme d'une insuffisance hépatique.

Si cette insuffisance est souvent accompagnée d'érythèmes marqués au visage surtout, mais à la face palmaire, ou plantaire, la langue constitue un signe également intéressant. On n'y trouve plus de saburres, qui sont ces enduits crémeux caractéristiques, mais une surface lisse, atrophique, rouge framboise foncée. Lorsque les dépôts réapparaissent on peut être assuré que le malade va vers le mieux. Souvent dans les cirrhoses, ce symptôme a été constaté par Kalk.

(Médecine et Hygiène, 20-2-56)

Note complémentaire concernant les canaux pulpo-périodontaux

par LOUIS KLEES (Luxembourg)

Rappelons d'abord que sous le terme de "canaux pulpo-périodontaux" on entend des canaux atypiques qui relient la cavité pulpaire des dents pluriradiculaires au périodonte du sommet de la bifurcation radiculaire. Au lieu de canaux pulpo-périodontaux, on pourrait aussi les appeler canaux de bifurcation comme l'a proposé Gerth ⁽¹⁾. De cette façon on éviterait toute confusion avec des canaux aberrants banals situés haut dans la région interradiculaire, sans toutefois déboucher exactement au sommet de la bifurcation.

Déjà, en 1948, en collaboration avec Philippart ⁽²⁾, j'ai publié ici un article dans lequel nous avons conclu qu'à peu près chaque dent à une racine surnuméraire et un certain nombre (environ 20%) de prémolaires supérieures à deux racines

sont pourvues d'un ou de plusieurs canaux pulpo-périodontaux. J'ai poursuivi mes recherches dans ce domaine et elles m'ont permis de confirmer d'une façon constante cette conclusion.

Dans sa thèse récente, Mme Andrianjatovo ⁽³⁾ écrit ne pas avoir trouvé ces canaux dans des premières molaires inférieures avec trois racines.

Il est en effet assez difficile de mettre ces canaux en évidence sur des coupes de molaires. Ces dents volumineuses nécessitent, dès le début de l'usure, une très épaisse coupe qu'il faut amincir avec beaucoup de précaution, car cette épaisse coupe initiale n'est pas transparente et il arrive facilement qu'on use la partie dans laquelle se trouve le canal pulpo-périodontal sans avoir remarqué celui-ci. Il importe donc, pendant l'usure, de sortir

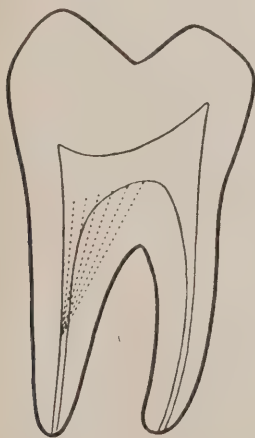


FIG. 1

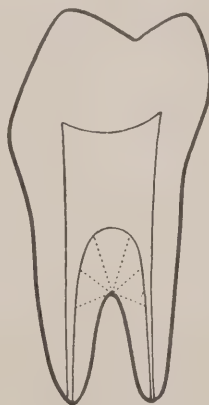


FIG. 2

FIG. 1.—Coupe mésio-distale d'une molaire inférieure avec trois racines.

FIG. 2.—Coupe sagittale de la racine bifide d'une molaire inférieure avec trois racines.

Le pointillé montre la partie de la dent dans laquelle peut se situer le canal pulpo-périodontal sur ces deux plans.

Ces schémas montrent que le canal pulpo-périodontal n'est de loin pas toujours parallèle aux canaux radiculaires voisins.

souvent la coupe hors de l'eau, de la sécher superficiellement et d'examiner en lumière réfléchie si le canal n'apparaît pas ouvert sur la surface usée.

Les difficultés pour trouver les canaux pulpo-périodontaux sur des coupes de molaires s'expliquent facilement par les schémas (fig. 1 et 2) qui montrent, sur des plans différents, la partie de la dent dans laquelle peut se situer ce canal. Car si nous savons que le canal pulpo-périodontal aboutit toujours exactement au sommet de la bifurcation, nous ignorons en quel endroit il débute. Il peut débiter tout aussi bien dans le plancher de la chambre pulpaire qu'en un endroit quelconque de la paroi d'un des canaux voisins.

Dans les dents normalement monoradicaux, telles les canines et prémolaires inférieures par exemple, il est très facile de découvrir les canaux pulpo-périodontaux parce qu'on les remarque généralement par transparence dès le début de l'usure. La transparence de la coupe constitue donc le moyen le plus simple et le plus sûr de localiser ces canaux pulpo-périodontaux.

Parmi les nombreuses variétés de canaux pulpo-périodontaux, que j'ai découverts après ma première publication, il en est trois que je voudrais décrire parce qu'elles me semblent particulièrement démonstratives.

Or, toutes les coupes et photos n'ont pas malheureusement cette valeur de démonstration, car, comme on peut le voir sur les schémas, il arrive rarement que le plan du canal pulpo-périodontal coïncide exactement avec le plan des deux canaux radiculaires voisins. Mais, répétons-le, dans chaque cas sans exception, il m'a été possible de constater au cours de l'usure de la coupe dentaire, que les canaux pulpo-périodontaux faisaient bien communiquer la pulpe avec le périodonte du sommet de la bifurcation bien que, dans certains cas, j'aie dû me résoudre à sacrifier une partie des canaux à l'usure afin d'arriver à obtenir une coupe assez mince pour réussir une microphoto convenable. J'insiste sur ce détail pour ré-

pandre à une objection qui m'a été faite par le Pr H. Chr. Greve ⁽⁹⁾ qui ne croyait pas à une importance pratique de ces canaux parce qu'ils se termineraient en culs-de-sac dans la masse de la dentine ou du ciment.

Pour répondre encore à cette objection, examinons quelques coupes de mes collections: dans la première, il s'agit (fig. 3) de la coupe transversale passant par la bifurcation d'une première prémolaire inférieure à deux racines, extraite chez un patient de 40 ans. On distingue un canal pulpo-périodontal fortement élargi par des résorptions et qui relie le canal de la racine vestibulaire au périodonte du sommet de la bifurcation. Cette photo montre non seulement que le canal ne se termine pas en cul-de-sac, mais encore que les dimensions de ces canaux pulpo-périodontaux dépassent parfois celles des canaux radiculaires normaux.

Sur la figure 4, on remarque un canal pulpo-périodontal dans une deuxième prémolaire inférieure à deux racines. La pointe de gutta placée lors de l'obturation radiculaire, a pénétré dans le canal pulpo-périodontal tandis que les deux canaux radiculaires échappaient au traitement. La dent, à la suite de cette erreur, a causé un abcès et a dû être extraite.

Je crois qu'après avoir examiné ces figures, il n'est plus permis de douter de l'importance pratique des canaux pulpo-périodontaux. Cette importance me semble encore accrue par le fait que les prémolaires inférieures avec deux racines ne constituent pas une rareté et surtout que, d'après la statistique de Le Huche ⁽⁴⁾, 10 p. 100 des canines inférieures posséderaient une racine surnuméraire.

Enfin la figure 5 montre une coupe sagittale de prémolaire inférieure extraite chez un patient de 37 ans. En haut de la figure, on remarque encore une cavité de résorption provenant d'un granulome interne situé dans la moitié supérieure de la racine. En bas, on voit deux canaux radiculaires et entre ces deux canaux on distingue une couche de ciment, signe que, sans être véritablement séparées, la dent possède deux racines. Or, même dans



FIG. 3.—Coupe transversale passant par la bifurcation de la racine bifide d'une première prémolaire inférieure. Un canal pulpo-périodontal très large relie le canal de la racine vestibulaire au périodonte du sommet de la bifurcation.

FIG. 4.—Pointe de gutta qui a pénétré lors de l'obturation radiculaire dans le canal pulpo-périodontal d'une deuxième prémolaire inférieure avec deux racines.

FIG. 5.—Canal pulpo-périodontal dans un cas rudimentaire de racine surnuméraire.

ce cas rudimentaire de racine surnuméraire, le canal pulpo-périodontal ne fait pas défaut. On le distingue nettement, traversant de haut en bas la dentine et ensuite la couche de ciment qui sépare les deux racines.

Dans la majorité des canaux pulpo-périodontaux trouvés dans des dents vivantes au moment de l'extraction, j'ai remarqué un gros vaisseau sanguin. J'ai fait la même observation dans de très nombreux autres canaux aberrants. Ce

détail a d'ailleurs été signalé par plusieurs autres auteurs notamment: G. Fischer ⁽⁶⁾, A. J. Held ⁽⁸⁾, Orban ⁽⁷⁾ entre autres.

Cette observation incite à conclure, comme je l'ai écrit dans un travail récent (Klees, ⁽⁸⁾), que la cause des canaux aberrants est d'abord un vaisseau sanguin situé atypiquement, qu'ensuite la dentine, au cours de sa formation, respecte et entoure progressivement.

Dans le cas des dents à racines sur-

numéraires, on est donc amené à admettre *a priori* l'existence constante d'un vaisseau sanguin passant à l'endroit où se situera plus tard la bifurcation.

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Nouvelles de l'Association

La fluoruration remporte la palme par une bonne majorité

(Les résultats de l'enquête Gallup sur la fluoruration ont paru dans les journaux du Canada en date du 8 août 1956)

Les Conseils municipaux du Canada discutent actuellement avec assez de chaleur de la valeur de la fluoruration de l'eau de consommation. Un vote pris au sein des conseillers municipaux, qui ont entendu parler de la chose, favoriserait l'adoption de cette mesure par les municipalités. Sur quatre dirigeants des affaires municipales de ce pays, deux se sont prononcés en faveur de la fluoruration, un est franchement contre et le dernier ne s'est pas formé d'opinion.

La province de Colombie britannique est celle qui compte le plus d'adeptes de la fluoruration; en effet, on y compte trois partisans contre un adversaire. La province où le débat est le plus serré est l'Ontario où les conseillers favorables à cette mesure sont dans la proportion d'à peine deux contre un adversaire. Les enquêteurs de l'Institut canadien de l'Opinion publique ont d'abord décidé de connaître quelle proportion de la population connaissait quelque chose sur la question, en posant la question suivante:

"Avez-vous entendu parler ou avez-vous lu quelque chose au sujet de la fluoruration de l'eau des aqueducs?"

Oui	77
Non	23
	—
	100

La population de l'Ontario paraît être celle qui est le plus au courant de la question, puisque 93 pour cent de ses adultes ont répondu "oui" à la question; les provinces de l'Ouest suivent de très près, tandis que les gens du Québec et des provinces maritimes connaissent moins le problème. A ceux qui étaient au courant de la question, les enquêteurs demandaient une se-

conde question: "Approuvez-vous, oui ou non, la fluoruration de l'eau de votre municipalité?"

Oui	41
Non	18
Indécis	18
	—

Total de ceux qui connaissent quelque chose au sujet de la fluoruration 77

A ceux qui se prononçaient en faveur de cette mesure, on demandait pourquoi ils étaient pour. On peut grouper leurs réponses dans ces catégories:

Parce que la fluoruration prévient la carie dentaire	11
Parce qu'elle aide la santé publique ..	7
Parce qu'elle prévient la carie dentaire chez les enfants	3
Parce qu'elle mérite d'être essayée pour prévenir la carie dentaire ..	2
Parce qu'elle a profité aux régions qui l'ont essayée	2
Parce qu'elle permettra de diminuer les notes des dentistes	1
Diverses réponses	7
On ne sait pas pourquoi	8
	—
	41

D'un autre côté, à ceux qui s'opposaient à la fluoruration, on demandait quelle raison motivait leur opposition:

On ne croit pas que cela soit nécessaire	4
Peut nuire à la santé	3
N'a pas fait l'objet de recherches suffisantes	2
Change le goût de l'eau	2
Coûterait trop cher: les taxes pourraient augmenter	1
Diverses réponses	3
Ou ne sait pas pourquoi	3
	—
	18

Au nombre de ceux qui étaient contre la fluoruration, plusieurs demeuraient dans des campagnes où l'eau est tirée des puits.

Pour eux, la chose n'était pas pratique. D'autres croyaient que les particuliers devraient ajouter à l'eau, s'ils le désirent, les ingrédients nécessaires; d'autres que les particuliers pourraient ingérer les médicaments sous forme de tablettes. D'autres ont répondu: "Il y a déjà trop de substances artificielles dans l'eau."

Municipalités qui ont fluoruré leur eau, en date d'octobre, 1956:

Municipalités	début	population
Terre-Neuve aucune		
Ile-du-Prince-Edouard aucune		
Nouvelle-Ecosse aucune		
Nouveau-Brunswick aucune		
Québec		
Pointe Claire	3 février 1955	10,80
Sillery	19 octobre 1955	13,800
Ontario		
Brantford	20 juin 1955	45,000
Brockville	18 février 1956	15,000
Fort Erie	18 février 1952	8,500
Thorold	12 février 1952	7,500
Sudbury	29 août 1952	60,000
Deep River	9 décembre 1952	3,000
Oshawa	26 février 1953	42,000
Tisdale	3 octobre 1955	8,000
Manitoba		
Brandon	8 mars 1955	23,000
Saskatchewan		
Assiniboia	mai 1953	2,500
Moose Jaw	décembre 1952	27,500
Saskatoon	juillet 1955	57,500
Swift Current	octobre 1954	7,500
Weyburn	mars 1955	7,148
Wynyard	août 1956	1,326
Alberta		
aucune		
Colombie britannique		
Smithers	21 juin 1955	1,700
Prince George	13 septembre 1955	12,500
Kelowna	15 septembre 1956	8,500

Remarques sur la fluoruration

La liste apparaissant ci-dessus ne contient que les noms des municipalités qui ont officiellement annoncé cette décision. Cette enquête a aussi recueilli des renseignements sur cette question dans différentes provinces.

Nouveau-Brunswick

Le 15 octobre, la ville de St-Jean (population 51,000) a tenu un referendum sur la question. Trois milles votes ont été favorables et 2,000 défavorables. Cependant, on doute fort qu'on puisse commencer la

fluoruration avant que la loi de santé du Nouveau-Brunswick soit amendée par la Législature. Il y a plus d'un an, un groupe de contribuables de Fredericton a présenté une motion ex parte à la Cour Suprême du Nouveau-Brunswick pour s'opposer à une résolution du conseil municipal de cette ville recommandant la fluoruration de l'eau de son aqueduc; il s'en suit que la fluoruration doit être retardée dans toute la province jusqu'à la Législature se prononce à ce sujet. La Cour Suprême, dans son jugement, ne s'est pas prononcé sur les mérites de la mesure elle-même, mais sur une question de technicalité touchant la phraséologie de la loi de santé du Nouveau-Brunswick.

Ontario

La Cour Suprême de cette province, par son jugement rendu sur les termes de la loi de la santé publique, dans la cause du Village de Forest Hill vs le Grand Toronto, a retardé l'application de cette mesure. A la suite de ce jugement, deux municipalités (Toronto Township et Renfrew) ont arrêté la fluoruration et d'autres attendent que la situation soit éclaircie. On s'attend à ce qu'à la session prochaine du parlement on amende la loi de façon à ce que tout entre dans l'ordre.

Manitoba

La ville de Winnipeg (pop. 399,000) s'attend à commencer la fluoruration le 1er décembre 1956.

Saskatchewan

On a tenu un referendum à Battleford, le 30 octobre.

Alberta

En conformité avec une loi passée l'an dernier à la Législature, on ne peut appliquer la fluoruration qu'après le 1er octobre 1956 et cela seulement à la suite d'un plébiscite. Plusieurs municipalités se proposent de tenir des referendums prochainement.

Douzième congrès de la Fédération dentaire internationale

La Fédération dentaire internationale tiendra son douzième congrès à Rome, du 7 au 14 septembre 1957.

Réservations

On conseille à tous ceux qui se proposent d'assister à ce congrès de faire leur réservation à bonne heure. On a retenu un certain nombre de chambres pour les membres de l'Association dentaire canadienne, mais il faudra confirmer au tout début de la nouvelle année le nombre de personnes qui doivent s'y rendre.

La Cie Thos. Cook et fils a été officiellement chargée d'organiser le voyage et de

réserver les chambres pour les membres de l'A.D.C. On doit adresser toutes les demandes de renseignements à la Cie Thos. Cook et fils, à 94 rue Adelaide ouest, Toronto, ou à une de leurs succursales dans les différentes villes.

Programme

L'organisation va bon train. Les réunions scientifiques se tiendront dans le Palais des Congrès et toutes les communications seront traduites simultanément en cinq langues. Il y aura une exposition d'Hygiène buccale et de Dentisterie sociale tenue sous le patronage du Haut Commissaire de la Santé publique; cette exposition sera ouverte du 7 au 30 septembre dans un édifice voisin du Palais des Congrès; elle comprendra des sections sur divers sujets, comme l'organisation des soins dentaires pour les écoliers, les employés d'industrie, les groupes d'assurances et les municipalités; comme le matériel d'éducation dentaire; comme les statistiques sur les méfaits d'une mauvaise santé dentaire et sur les mesures prises par différents pays pour les combattre; comme un étalage de "matériel pour les soins dentaires". Cette exposition devrait être des plus populaires, à cause de l'intérêt qui se manifeste de plus en plus dans le monde entier en faveur des mesures prophylactiques. Il y aura aussi une exposition scientifique qui illustrera les progrès de la science dentaire, et les méthodes modernes utilisées dans ses différents domaines; il y aura aussi un étalage de collections de volumes prêtées par des universités et des facultés dentaires. Cette exposition sera divisée en trois parties: (1) Histoire; (2) Matériel d'enseignement; (3) Bibliographie.

On a porté une attention spéciale à l'exposition commerciale, où seront représentées les industries dentaires les plus considérables du monde entier. Cette exposition devrait soulever un intérêt considérable pour un clinicien qui trouve des lacunes dans l'instrumentation compliquée dont il se sert aujourd'hui; grâce à cette exposition, il pourra voir les façons dont différents pays tentent de solutionner le problème d'adaptation des instruments.

La ville de Rome offrira aux congressistes des à-côtés intéressants. Le comité d'organisation a fait preuve d'imagination en projetant des visites originales; aussi, il y aura un cocktail dans les cloîtres admirables de Michel-Ange aux Bains de Dioclétien, une visite à l'opéra en plein-air et un concert à ciel ouvert; une représentation au théâtre

impérial de Rome; un bal du Congrès, un souper du Congrès et un souper de la F.D.I. Après avoir mentionné ces attractions, l'annonce d'un tournoi de golf semble chose ordinaire. Sa Sainteté le Pape recevra les congressistes en audience publique au Vatican et le Maire de Rome donnera une réception.

Le rédacteur de l'A.D.C. élu à l'Association américaine des rédacteurs dentaires

A une récente réunion de l'Association américaine des Rédacteurs dentaires, le docteur W. J. Dunn, rédacteur du Journal de l'Association dentaire canadienne, a été élu président-élu de cette association.

M. Gordon V. Allen nommé publiciste

M. Gordon V. Allen vient d'être embauché comme agent de publicité pour le Journal de l'Association dentaire canadienne. M. Allen, qui a vingt ans d'expérience dans le domaine de la publicité, aura charge de toute la publicité du Journal. A cet effet, un bureau a été organisé à Toronto, à 15 rue Toronto, suite 12, sous le nom Gordon V. Allen Publications. Toutes les annonces du Journal seront contrôlées par ce bureau.

Les livraisons de 1956 du Journal se font rares

A cause de la grande demande faite pour des copies additionnelles des livraisons de 1956 du Journal, les réserves des numéros de cette année sont basses. Les dentistes qui peuvent disposer des copies de leur Journal de cette année sont priés de les faire parvenir au secrétariat de l'Association, 234 rue St-Georges, Toronto.

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Revue des Revues

M.-C. BUONOCORE. — Une méthode simple pour augmenter l'adhésion des matériaux acryliques d'obturation.

L'inconvénient majeur des résines acryliques et autres matériaux d'obturation est leur manque d'adhésion aux tissus dentaires. Un produit d'obturation capable d'adhérer solidement à ces tissus offrirait des avantages considérables, en simplifiant notablement la préparation des cavités et en permettant de réaliser le scellement efficace des sillons, fissures et lésions carieuses de début.

L'auteur a tenté d'obtenir ce résultat par une méthode simple basée sur la modification de la surface de la dent par un traitement chimique.

Deux techniques furent appliquées. La première comportait l'emploi d'une dilution à 50% d'un réactif commercial de phosphomolybdate contenant du tungstate de sodium, en conjonction avec une solution à 10% d'acide oxalique. L'expérience fut réalisée de la façon suivante: on laissait tomber une petite goutte du réactif molybdate sur la face labiale des dents, incisives supérieures et inférieures, quelquefois aussi prémolaires et molaires, de sujets volontaires et on frictionnait activement pendant 30 secondes. On séchait ensuite à l'air comprimé pour obtenir à la surface de l'émail un film mince, sur lequel on laissait tomber une autre petite goutte, cette fois de la solution à 10% d'acide oxalique. On frictionnait de nouveau jusqu'à formation d'un précipité blanc, que l'on séchait ensuite à l'air pour former une surface blanche opaque. Cette surface était ensuite lavée à l'eau tiède, tout en frictionnant avec une boulette de coton. Après séchage à l'air, on appliquait des gouttes d'une résine acrylique d'obturation, de 5 mm. de diamètre. On procédait de la même façon sur les dents servant de contrôle, avec cette différence que les gouttes d'acide étaient remplacées par des gouttes d'eau.

Résultats: sur 15 surfaces dentaires non traitées, la durée moyenne de l'adhésion fut de six heures; sur 15 surfaces traitées, elle fut de 160 heures.

La seconde méthode employait de l'acide phosphorique à 85%, en vue de provoquer une simple décalcification de la surface dentaire. On procéda de la même façon que précédemment, la goutte d'acide étant laissée au contact de la surface pendant 30 secondes, puis chassée par un jet d'eau. Résultats: sur les surfaces de contrôle non traitées, la durée moyenne de l'adhésion fut de 11 heures, contre 1.070 heures sur les surfaces traitées. On tenta, sur cinq de ces dernières, de détacher les gouttes de résine durcie en les soulevant avec un instrument tranchant. Il fallut appliquer une force considérable, qui aboutit à la cassure de la résine plutôt qu'à une séparation nette.

Sur les cinq autres surfaces traitées, les gouttes de résine étaient encore en place après 90 jours, malgré les tentatives répétées de les retirer avec l'ongle du pouce.

D'autres expériences seront faites pour apprécier la résistance à l'action des acides et des bactéries ou de l'humidité après des temps variables, d'obturations ainsi obtenues. D'ores et déjà cependant, ces observations ouvrent de nouvelles perspectives pour la solution du problème de l'adhésion des matériaux acryliques aux surfaces dentaires. (*J. Dent. Res.*, décembre 1955.—*Dent. Abstr.*, juillet 1956).

A.-A. FISHER. — Sensibilisation allergique de la peau et de la muqueuse buccale à la résine acrylique.

L'auteur a étudié quatre patients atteints de dermite des mains, démontrée par les tests et l'examen clinique comme étant due à une sensibilité allergique au liquide monomère méthylméthacrylate. Ces sujets n'étaient, par contre, pas sensibles à la poudre de polyméthylméthacrylate, ni à la résine auto-polymérisante. Deux de ces patients supportaient, sans inconvénient, des appareils de prothèse en résine acrylique, malgré leur sensibilité au monomère. Ils étaient cependant sensibles au test au monomère de résine auto-polymérisante, ce qui prouve que ce matériau contient une quantité de monomère non polymérisé, suffisante pour provoquer des réactions.

Vingt cas d'ulcérations provoquées par les appareils de prothèse furent également étudiés. Quatre de ces patients avaient été informés antérieurement qu'ils étaient allergiques à leurs appareils en résine, à la suite de réactions positives obtenues par attachement des appareils sur leur avant-bras pendant 48 heures. Trois d'entre eux firent remplacer leurs appareils par d'autres matériaux, sans résultat. Le quatrième fut trouvé allergique au monomère, mais put porter sans inconvénient des appareils en résine acrylique auto-polymérisante. Dans aucun de ces cas, la preuve ne put être trouvée d'un rapport entre les ulcérations et leur sensibilité allergique au matériau qui composait la prothèse.

À titre de comparaison, l'auteur se livra à une expérience sur 70 sujets témoins, 20 hommes et 50 femmes, en attachant à leur avant-bras, pendant 24 heures, des appareils en résine. Tous présentèrent des réactions de rougeur à des degrés différents. Sur 17 de ces sujets, 2 hommes et 15 femmes, de petites bulles apparurent aux endroits de pression maxima.

L'examen histologique montra des bulles sous-épidermiques, sans réponse eczémateuse.

Il résulte de ces expériences que le liquide monomère méthylméthacrylate est un sensibilisateur

et peut provoquer des réactions eczémateuses de contact sur la peau et à la muqueuse buccale, lorsqu'il n'est pas complètement polymérisé. Le polymère, et le matériau entièrement polymérisé, ne semblent pas être sensibilisateurs. Les réactions que peuvent présenter certains sujets si on leur attache sur l'avant-bras un appareil en résine pendant 48 heures, semblent n'être dues qu'à des effets non spécifiques, de pression. (*Jour. Prosth. Dentistry*, septembre 1956).

R. JORGEN.— Les effets de la stérilisation par la chaleur sur les instruments tranchants.

L'efficacité d'un instrument tranchant dépend de la forme et de la surface de son bord coupant et de la dureté du métal. Il a été déterminé que les instruments peuvent supporter la chaleur jusqu'à la température de recuit, sans qu'intervienne de changements dans la dureté du métal. La corrosion, de quelque nature qu'elle soit, de la surface du bord coupant, diminue son tranchant. Elle peut être fonction d'oxygène, d'eau, de chaleur, du pH ou de différentes substances chimiques. Le degré de rouille dépend davantage de l'humidité relative que de la température.

En utilisant un appareil permettant de mesurer quantitativement le tranchant des instruments, des expériences pratiquées avec des lames de rasoir ont conduit à des conclusions intéressantes.

Il a été constaté que la stérilisation à sec provoque une diminution du pouvoir tranchant, plus marquée à mesure que la température monte, mais atteignant un plateau après un certain temps.

La stérilisation dans une atmosphère dépourvue d'oxygène n'entraîne qu'une diminution minime du pouvoir tranchant, ce qui permet de penser que celle-ci est due à l'oxydation.

La stérilisation dans l'huile chauffée donne les mêmes résultats que l'air sec.

Des essais en vue de trouver une méthode pratique pour empêcher l'oxydation par des moyens chimiques n'ont pas abouti. Quelques faibles résultats ont été obtenus avec le di-cyclohexyl-ammonium-nitrite.

La stérilisation par ébullition affaiblit le pouvoir tranchant de la même façon. On peut l'éviter en partie par l'emploi d'eau alcaline ou par l'élimination de l'oxygène. L'addition de substances telles que nitrite de soude, chromate d'ammonium ou di-nitro-hydrophosphate, a donné une protection appréciable contre l'oxydation.

Sur la base de ces expériences et des résultats obtenus à ce jour, on peut conseiller de stériliser les instruments exposés à la rouille, par l'ébullition dans l'eau distillée dépourvue d'oxygène, avec addition de 1% de soude et 1% de nitrite de soude.

Des expériences sont en cours avec une série de anti-oxydants. (*Tandlaegebladet, Copenhagen*, septembre 1956).

F.-C. CAROTHERS.— Emploi de la hyaluronidase lors des extractions en vue de la pose d'appareils de prothèse immédiate.

A peu près tous les patients devant subir l'extraction de leurs dents antérieures nous demandent de préserver leur apparence normale par l'insertion immédiate d'appareils de prothèse. Cette technique se heurte cependant à des difficultés, soulevées par les réactions post-opératoires: gonflement, trismus, oedème traumatique, hématomes, etc.

La hyaluronidase, enzyme dérivée des extraits testiculaires, est un "facteur dispersant"; par la liquéfaction temporaire des barrières naturelles, la hyaluronidase ouvre des passages dans les tissus permettant la libre diffusion et l'absorption des liquides.

L'auteur rapporte les résultats obtenus avec cette technique après expérimentation sur 62 patients, ayant subi des extractions généralement aux deux maxillaires, sous anesthésie locale pour la plupart. La hyaluronidase était additionnée à la solution anesthésique ou injectée autour des dents dans les cas d'anesthésie générale. Des antibiotiques étaient administrés une heure avant et 24 heures après l'intervention, ainsi que des sédatifs chaque fois que cela était nécessaire. Une série de 31 autres opérés fut étudiée à titre de comparaison.

L'anesthésie était obtenue rapidement, sa durée était normale. Gonflement immédiat, ballonnement et distorsion de la face et des tissus buccaux furent complètement évités; pas d'oedème postopératoire ou d'hématome et pas de douleur, ou presque, dans la plupart des cas. Le temps de cicatrisation fut abrégé sensiblement. Les appareils de prothèse, ajustant de façon parfaite, furent insérés immédiatement avec le minimum d'irritation des muqueuses ou de rigidité des lèvres ou de la face. Les muqueuses présentaient un aspect normal lors d'un examen ultérieur après 24 heures. Aucune retouche ne fut nécessaire.

Au contraire, chez les sujets témoins, des gonflements postopératoires survinrent immédiatement dans 90,3% des cas et, au bout de 24 heures, dans 100% des cas. Les hématomes intra-buccaux furent observés dans la proportion de 93,5%; les douleurs et le trismus dans tous les cas; les ulcérations buccales dues à la pression des appareils dans les premières 24 heures, dans 90,3% des cas.

L'emploi de la hyaluronidase, qui permet d'obtenir une anesthésie plus profonde avec un volume moindre de liquide injecté et d'éviter l'oedème postopératoire est, en outre, particulièrement utile chez les enfants, pour extractions et travaux de dentisterie opératoire. (*J. Oral Surgery*, avril 1956. —*Dent. Abstr.*, juillet 1956).

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